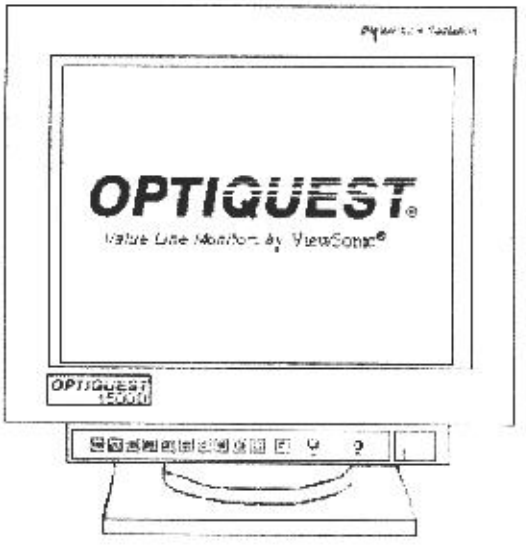
Service Manual

OPTIQUEST OP1500D

Model No. 1500D

14" Digital Controlled Color Monitor
Value Line Series



(Rev. 1 - August 1996)

ViewSonic® 20480 E. Business Parkway, Walnut, California 91789 USA - (800) 888-8583

FACTORY MODE SETTINGS						
PARAMETER	MODE					
	7					
HORIZONTIAL TIMING						
fH SYNC KHZ	31.47					
A H-TOTAL μS	31.777					
B H-SYNC μS	3.813					
C H-BP μS	1.907					
D H-ACTIVE μS	25.417					
E H-FP μS	0.635					
VERTICAL TIMING						
fV SYNC HZ	59.94					
O V-TOTAL mS	16.683					
P V-SYNC mS	0.0636					
Q V-BP mS	1.049					
R V-ACTIVE mS	15.253					
S V-FP mS	0.318					
H/V SYNC POLARITY	- / -					
DISPLAY SIZE HOR. unit : mm VER.	260 195					
RESOLUTION DOT LINE	640 480					
fPIXEL MHZ	25.18					
TEST MODE						

ALIGNMENT PROCEDURE

THIS ALIGNMENT PROCEDURE IS USED TO ADJUST / TEST THE PICTURE PERFORMANCE IN ORDER TO OBTAIN OPTIMUM CONDITIONS THE FOLLOWING SEQUENCE MUST BE FOLLOWED.

* WARM UP FOR 30 MINUTES BEFORE PERFORMING EVERY TEST AND ALIGNMENT, CRT FACES TO EAST, ROOM BRIGHTNESS IS TO BE AT 500 LUX. MAKE SURE THE ANALOG SIGNAL LEVEL IS AT 0.7 Vp-p AND THEN INPUT THE SIGNAL.
* THE FOLLOWING IS THE INITIAL SET UP BEFORE THE AUTO ALIGNMENT.

(a) PRE-CHECK AND ADJUSTMENT

1. ADJUSTMENT OF THE HIGH VOLTAGE :
   a. INPUT 61.08 KHZ 1024x768 CROSS HATCH PATTERN,
   b. SET BOTH CONTRAST AND BRIGHTNESS LEVEL TO MINIMUM.VERIFY IF THE HIGH VOLTAGE READS 24.4 KV +/- 0.1KV,OTHERWISE ADJUST VRP1 .
2. G1 VOLTAGE SET-UP :
   a. INPUT 61.08 KHZ 1024x768 CROSS HATCH PATTERN.
   b. SET BOTH CONTRAST AND BRIGHTNESS LEVEL TO MAXIMUM.VERIFY IF THE G1 VOLTAGE READS -45V +/- 0.5V,OTHERWISE ADJUST VR305.
3. X-RAY CHECK:
   a. INPUT 61.08 KHZ 1024x768 CROSS HATCH PATTERN.
   b. PARALLEL ON 27KR RESISTOR TO R325.THE SCREEN DISPLAY SHALL BE DISAPPEAR.
   c. POWRE OFF THE U.U.T AND REMOVE 27KR RESISTOR.
   d. POWER ON THE U.U.T AGAIN.THE U.U.T SCREEN SHALL BE DISPLAY.
4. A.C.L. CIRCUIT SET-UP :
   a. INPUT 61.08 KHZ 1024x768 FULL WHITE PATTERN.
   b. ADJUST VR304,THE SCREEN DISPLAY SHALL BE CHANGED.THEN TURNING VR304 COUNTERCLOOCKWISE UNTIL IT REACHES THE END.
5. POWER SAVING VERIFICATION:
   a. INPUT 61.08 KHZ 1024*768 TIMING.
   b. SWITCH OFF H-SYNC SIGNAL FROM THE SIGNAL INTERFACE BOX.THE POWER INDICATOR LED SHALL CHANGE THE EMITTING COLOR FROM GREEN TO ORANGE. SWITCH ON THE H-SYNC SIGNAL AGAIN.
   c. SWITCH OFF V-SYNC SIGNAL. THE LED SHALL CHANGE THE EMITTING COLOR FROM GREEN TO ORANGE. SWITCH ON THE V-SYNC SIGNAL AGAIN.
   d. SWITCH OFF BOTH H AND V SYNC SIGNALS. THE LED SHALL CHANGE THE EMITTING COLOR FROM GREEN TO ORANGE.SWITCH ON BOTH H AND V SYNC SIGNALS AGAIN.

(b) WHITE BALANCE AND BRIGHTNESS ADJUSTMENT:(FOR WHITE BALANCE MANUAL ADJUST USE ONLY)

1. CONNECT SIGNAL I/O CABLE FROM U.U.T TO SIGNAL INTERFACE BOX.POWER ON THE U.U.T.
2. CONNECT I2C BUS CABLE FROM PC-COMPUTER TO I2C CONNECTOR P809 ON THE D.M.C DAUGHTER BOARD OF THE U.U.T.
3. FIRMWARE DOWNLOAD:(FOR FIRMWARE UPDATE ONLY)
   a. PRESS "F2" COMMAND KEY FROM THE KEYBOARD ONCE AND WAIT UNTIL THE "LOADING" DECAL DISAPPEARS FROM THE SCREEN.
   b. PRESS "ENTER" KEY TWICE AND WAIT UNTIL THE MAIN ALIGNMENT MENU POPS UP ON THE SYSTEM SCREEN.
   c. RECYCLE THE POWER ON/OFF SWITCH OF THE U.U.T TO WRITE DATA TO EEPROM.
4. RASTER CENTERING ADJUSTMENT:(FOR RASTER IS NOT IN THE CENTER OF THE BEZEL ONLY)
   a. PRESS "CTRL" AND "F1" COMMAND KEYS SIMULTANEOUSLY. IF THE FIRMWARE REVISION OF THE U.U.T IS CORRECT,VDY4 WAVEFORM WILL POP UP ON THE SYSTEM SCREEN. OTHERWISE,A "WRONG FIRMWARE" DECAL WILL POP UP INSTEAD.
   b. UTILIZE "INSERT"(+1),"DELETE"(-1),"HOME"(+5), AND "END"(-5) KEYS TO ALIGN THE RASTER IN THE HORIZONTAL DIRECTION.
   c. PRESS "F8" COMMAND KEY ONCE TO SAVE THE CHANGE.
   d. PREES "8" NUMBERICAL KEY ONCE AND REPEAT THE ABOVE STEPS TO ALIGN THE RASTER IN THE VERTICAL DIRECTION.

e. PRESS "F8" COMMAND KEY ONCE TO SAVE THE CHANGE.
f. PRESS "ESC" COMMAND KEY ONCE TO RETURN TO THE MAIN MENU.

5. USE DEGAUSSING COIL TO DEMAGNETIZE THE C.R.T FACE OF THE U.U.T.

6. VST1--VST8 SET-UP :
   ST7,8 VOLTAGE HI(FF), VST4,5,6 VOLTAGE IS 1V (MEANS R,G,B DC VALUE SET UP); VST 1,2,3 VOLTAGE IS 2V (MEANS R,G,B GAIN SET UP)

7. B GUN CATHODE AMPLITUDE
   INPUT 61.08 KHZ 1024x768 COLOR GREY LEVEL PATTERN.
   ADJUST THE EXT. BRI. KEY TO MIN.; THEN ADJUST THE EXT. CONTRAST KEY TO MAX.
   ADJUST VR303 UNTIL THE AMPLITUDE IS AT 34 Vp-p.

8. BRIGHTNESS OF RASTER SET-UP :
   ADJUST THE EXT. BRI.KEY TO MAX.; AND ADJUST THE SCREEN VR UNTIL GET THE RASTER BRIGHTNESS IS APP. 2FL.

9. 6500k WHITE BALANCE ADJUSTMENT:
   HIGH/LOW BRIGHTNESS COLOR TEMPERATURE ALIGNMENT :
   a. LOAD VST1--6 VALUE.
   b. INPUT 61.08 KHZ 1024x768, 2" SQUARE PATTERN.
      ADJUST VST7 UNTIL THE RASTER BRIGHTNESS IS APP. 0.08 FL.
      ADJUST VST8 UNTIL 2" SQUARE BRIGHTNESS IS AT 2 FL.
      ADJUST VST4,5 UNTIL x = 0.313 ± 0.01, y = 0.329 ± 0.01.
   c. ADJUST VST7 UNTIL THE RASTER BRIGHTNESS IS AT 0.08 FL.
      ADJUST VST8 TO MAX.
      ADJUST VST1,2 UNTIL x = 0.313 ± 0.01, y = 0.329 ± 0.01.
   d. REPEAT THE ALIGNMENT ACCORDING TO b & c PROCEDURE,UNTIL THE PICTURE BRIGHTNESS x = 0.313 ± 0.01, y = 0.329 ± 0.01.

10. 9300k WHITE BALANCE ADJUSTMENT:
    HIGH/LOW BRIGHTNESS COLOR TEMPERATURE ALIGNMENT :
    a. LOAD VST1--6 VALUE.
    b. INPUT 61.08 KHZ 1024x768, 2" SQUARE PATTERN.
       ADJUST VST7 UNTIL THE RASTER BRIGHTNESS IS APP. 0.08 FL.
       ADJUST VST8 UNTIL 2" SQUARE BRIGHTNESS IS AT 2 FL.
       ADJUST VST4,6 UNTIL x = 0.283 ± 0.01, y = 0.298 ± 0.01.
    c. ADJUST VST7 UNTIL THE RASTER BRIGHTNESS IS AT 0.08 FL.
       ADJUST VST8 TO MAX.
       ADJUST VST1,3 UNTIL x = 0.283 ± 0.01, y = 0.298 ± 0.01.
    d. REPEAT THE ALIGNMENT ACCORDING TO b & c PROCEDURE,UNTIL THE PICTURE BRIGHTNESS x = 0.283 ± 0.01, y = 0.298 ± 0.01.

11. MAIN TIMING (61.08 KHZ 1024x768) PERFORMANCE ALIGNMENT.
    a. RASTER CENTERING: ADJUST VDY4(H-DC), VDY8(V-DC), UNTIL THE RASTER IS AT THE CENTER OF THE BEZEL.
    b. V-PHASE : PLACE THE VERTICAL PICTURE IN THE CENTER OF THE RASTER.
    c. V-SIZE : MAKE THE VERTICAL HEIGHT APP. 195mm.
    d. PINCUSHION: MAKE THE PICTURE TO BE A STRAIGHT LINE.
    e. H-PHASE : CENTER THE PICTURE ON THE BEZEL, | L-R | ≤ 2 mm.
    f. H-SIZE : MAKE THE HORIZONTAL WIDTH 260 ± 2 mm.
    g. PINCUSHION PHASE/BALANCE/WAVEFORM: PINCUSHION DISTORTION,MAKE THE PICTURE, H ≤ 1.5 mm.
    h. V-LINEARITY: ADJUST VDY1 UNTIL THE VERTICAL LINE IS LESS THAN 7.5%
    i. V-SIZE : MAKE THE VERTICAL HEIGHT 195 ± 2 mm.

12. BRIGHTNESS ADJUSTMENT:
    a. INPUT 61.08 KHZ 1024x768, NO VIDEO INPUT.
    b. PRESS "9300" BUTTON OF THE CONTROL MEMBRANE SWITCH ONCE
    c. ADJUST THE EXT. "BRIGHTNESS" KEY AND "CONTRAST" KEY TO MAX. THEN ADJUST THE SCREEN VR ON THE FBT OF THE U.U.T TO MAKE THE ANALYZER READS BETWEEN 1.8-2.2 FL.
    d. ADJUST THE EXT. "BRIGHTNESS" KEY UNTIL,SET-UP THE RASTER BRIGHTNESS IS 0.08 FL.
    e. INPUT 2" SQUARE PATTERN, ADJUST EXT. "CONTRAST" KEY TO MAX. THEN ADJUST VR303 UNTIL TO MAKE THE DISPLAY CENTER BRIGHTNESS IS 42 FL ± 1 FL.
    f. INPUT FULL WHITE PATTERN, ADJUST EXT. "CONTRAST" KEY TO MAX. THEN ADJUST VR304 UNTIL TO MAKE THE DISPLAY CENTER BRIGHTNESS IS 32 FL ± 1 FL.

(c) WHITE BALANCE AND BRIGHTNESS ADJUSTMENT:(FOR WHITE BALANCE AUTO-ADJUST USE ONLY)

1. CONNECT SIGNAL I/O CABLE FROM U.U.T TO SIGNAL INTERFACE BOX.POWER ON THE U.U.T.

2. CONNECT I2C BUS CABLE FROM PC-COMPUTER TO I2C CONNECTOR P809 ON THE D.M.C DAUGHTER BOARD OF THE U.U.T.

3. FIRMWARE DOWNLOAD:(FOR FIRMWARE UPDATE ONLY)
   a. PRESS "F2" COMMAND KEY FROM THE KEYBOARD ONCE AND WAIT UNTIL THE "LOADING" DECAL DISAPPEARS FROM THE SCREEN.
   b. PRESS "ENTER" KEY TWICE AND WAIT UNTIL THE MAIN ALIGNMENT MENU POPS UP ON THE SYSTEM SCREEN.
   c. RECYCLE THE POWER ON/OFF SWITCH OF THE U.U.T TO WRITE DATA TO EEPROM.

4. RASTER CENTERING ADJUSTMENT:(FOR RASTER IS NOT IN THE CENTER OF THE BEZEL ONLY)
   a. PRESS "CTRL" AND "F1" COMMAND KEYS SIMULTANEOUSLY. IF THE FIRMWARE REVISION OF THE U.U.T IS CORRECT,VDY4 WAVEFORM WILL POP UP ON THE SYSTEM SCREEN. OTHERWISE,A "WRONG FIRMWARE" DECAL WILL POP UP INSTEAD.
   b. UTILIZE "INSERT"(+1),"DELETE"(-1),"HOME"(+5), AND "END"(-5) KEYS TO ALIGN THE RASTER IN THE HORIZONTAL DIRECTION.
   c. PRESS "F8" COMMAND KEY ONCE TO SAVE THE CHANGE.
   d. PREES "8" NUMBERICAL KEY ONCE AND REPEAT THE ABOVE STEPS TO ALIGN THE RASTER IN THE VERTICAL DIRECTION.
   e. PRESS "F8" COMMAND KEY ONCE TO SAVE THE CHANGE.
   f. PRESS "ESC" COMMAND KEY ONCE TO RETURN TO THE MAIN MENU.

5. USE DEGAUSSING COIL TO DEMAGNETIZE THE C.R.T FACE OF THE U.U.T.

6. WHITE BALANCE ADJUSTMENT:
   a. HOOK MINOLTA COLOR ANALYZER'S PROBE ON TO THE U.U.T DISPLAY CENTER AND PRESS "F6" COMMAND KEY ONCE TO EXECUTE THE ALIGNMENT PROGRAM.
   b. A SUB-MENU WILL SHOW UP ON THE SCREEN. SELECT"OK" ICON UNDER ITEM "1", THEN ADJUST THE SCREEN VR ON THE F.B.T OF THE U.U.T TO MAKE THE ANALYZER READS BETWEEN 1.5-2.5 FL.PRESS "ENTER" KEY ONCE.
   c. A "PRE-COLOR BALANCE ADJUST OK" WORDING WILL POP OUT ON THE SCREEN. ADJUST THE SCREEN VR ON THE F.B.T OF THE U.U.T TO MAKE THE ANALYZER READS BETWEEN 0.9-1.5 FL. PRESS "ENTER" KEY ONCE,SO THE WORDING WILL DISAPPEAR.
   d. SELECT "OK" ICON UNDER ITEM "2"(WHITE BALANCE ADJUST). PRESS "ENTER" KEY ONCE TO START THE "6500 K" WHITE BALANCE ADJUSTMENT.
   e. A "COLOR BALANCE ADJUSTMENT OK" WORDING WILL POP OUT ON THE SCREEN. PRESS "ENTER"KEY ONCE TO FINISH THE "6500 K" WHITE BALANCE ADJUSTMENT.
   f. SELECT "OK" ICON UNDER ITEM "3"(SECOND WHITE BALANCE ADJUST). PRESS "ENTER" KEY ONCE TO START THE "9300 K" WHITE BALANCE ADJUSTMENT.
   g. A "COLOR BALANCE ADJUSTMENT OK" WORDING WILL POP OUT ON THE SCREEN. PRESS "ENTER"KEY ONCE TO FINISH THE "9300 K" WHITE BALANCE ADJUSTMENT.
   h. A "COLOR BALANCE ADJUSTMENT OK & WRITE EPROM" WORDING WILL POP OUT ON THE SCREEN. PRESS "ENTER" AND "ESC" KEY CONTIGUOUSLY TO EXIT THE PROGRAM.
   i. RECYCLE THE POWER ON/OFF SWITCH OF THE U.U.T TO WRITE DATA INTO EEPROM

7. DATA DISPLAY SIZE SET UP:
   USE FRONT CONTROL MEMBRANCE SWITCH TO SET THE DISPLAY SIZE TO 195MM*260 MM,VERTICAL AND HORIZONTAL RESPECTIVELY. DON'T PRESS "RECALL" BUTTON AT THIS MOMENT.

8. 9300 K BRIGHTNESS SET UP AND 6500 K/9300 K WHITE BALANCE VERIFICATION:
   a. PRESS 9300 K BUTTON ON THE FRONT CONTROL MEMBRANCE SWITCH.
   b. SELECT "OK" ICON UNDER ITEM "4" (RASTER/2" PATTERN/WHITE PATTERN). PRESS "ENTER" KEY ONCE. THE FOLLOWING CHART IS TO BE USED TO VERIFY THE SETTING AND THE ADJUSTMENT.

ITEM	ADJUST NAME	PATTERN	BRI.*	CONT.	ADJUST	SPEC
1	RASTER BRI.	RASTER	MAX.	MAX.	SCREEN VR	1.8FL-2.2FL
2	RASTER BRI.	RASTER	-	-	EXT-BRI.*	0.08FL
3	2" SQUARE	2" SQUARE	-	MAX.	VR303	42FL ± 1FL
4	FULL WHITE BRI.	FULL WHITE	-	MAX.	VR304	32FL ± 1FL
5	W/B CHECK(6500 K)	2" SQUARE	-	-	EXT-CONT.)	2FL X:313±10 Y:329±10
6	W/B CHECK(6500 K)	2" SQUARE	-	-	EXT-CONT.)	MAX.X:313±10 Y:329±10
7	W/B CHECK(9300 K)	2" SQUARE	-	-	EXT-CONT.)	2FL X:283±10 Y:298±10
8	W/B CHECK(9300 K)	2" SQUARE	-	-	EXT-CONT.)	MAX X:283±10 Y:298±10
9	29FL SET	FULL WHITE	-	-	EXT-CONT.)	29FL ± 1FL

(d) MISCONVERGENCE AND FOCUS AND TILT ADJUSTMENT:
NOTE:
* WARM UP U.U.T WITH BLACK BOX FOR AT LEAST 30 MINUTES.
* C.R.T NECK FACES EARTH WEST.
* MAGNETIC FIELD CHECK.

1. CONNECT SIGNAL I/O CABLE FROM U.U.T TO SIGNAL INTERFACE BOX. POWER ON THE U.U.T.

2. FOCUS VERIFICATION:
a. INPUT 61.08 KHZ 1024*768 OF THE TIMING.
b. SELECT "@" CHARACTER PATTERN. IF FOCUS IS NOT GOOD,ADJUST FOCUS VR.

3. TILT ADJUSTMENT:
a. INPUT 61.08 KHZ 1024*768 OF THE TIMING,SELECT CROSS HATCH PATTERN.
b. PRESS "TILT" BUTTON OF THE FRONT CONTROL MEMBRANCE SWITCH ONCE. PRESS "+" OR "-" BUTTON WHILE THE LED IS STILL LID TO ADJUST THE TILT TO LESS THAN 1mm.

4. MISCONVERGENCE ADJUSTMENT:
a. INPUT 61.08 KZ 1024*768 OF THE TIMING,SELECT FULL WHITE PATTERN.
b. ADJUST THE EXT-BRI.KEY UNTIL THE RASTER DISAPPEARS. THEN ADJUST THE EXT-CONTRAST KEY UNTIL THE BRIGHTNESS IS 29 FL.
c. CHANGE THE PATTERN TO CROSS HATCH PATTERN.
d. USE KLEIN GAUGE TO VERIFY THE MISCONVERGENCE BETWEEN R/G,R/B, AND G/B IS IN THE SPEC. (A AREA ≤ 0.1mm,B AREA ≤ 0.3mm,C AREA ≤ 0.4)
AREA OF A ..... 30mm x 30mm circle
AREA OF B ..... 195mm x 195mm circle

e. CORRECT THE MISCONVERGENCE BY USING A SMALL MAGNETIC STRIP OR BY ADJUSTING MAGNETIC 4 POLES ON THE YOKE.

5. EACH OF THE FOCUS VR,SCREEN VR,AND 4 POIES AND VR OF THE YOKE NEEDS TO PUT A WHITE DOT PAINT. EACH SMALL MAGNETIC STRIP AND MAGNETIC METAL NEEDS TO PUT A YELLOW BOND.

(e) PER-CHECK FOR C.A.S ALIGNMENT BEFOR:

1. CONFIRMATION OF IMAGE PERFORMACE :
INPUT EACH A/C's TIMING (HxV = 10x8 CROSS HATCH PATTERN).
CONFIRM ITEM BY ITEM AS FOLLOWS:
a. HORIZONTAL LINEARITY: H ≤ 10 %
CALCULATION: | max. - min. / max. | x 100% ≤ 10 %
b. CONFIRM THE FUNTION OF THE RECALL BUTTON:
ADJUST THE H/V PHASE AND THE H/V SIZE TO ANY POSITION, PRESS THE RECALL BUTTON, THEN CHECK THAT THE IMAGE PERFORMANCE IS IN ACCORDANCE WITH THE SPEC. IF YES, THIS MEANS THE RECALL BUTTON IS O.K.

2. BRIGHTNESS UNIFORMITY CONFIRMATION:
a. INPUT 61.08 KHZ 1024x768 OF TIMING. SELECT 2" SQUARE PATTERN.
b. ADJUST THE EXT. BRI.KEY TO MAX.
c. ADJUST THE EXT. CONTRAST KEY UNTIL THE CENTER BRIGHTNESS IS 40 FL, THE BRIGHTNESS OF ANY POSITION OF CRT MUST NOT BE LESS THAN 70 % OF THE CENTER BRIGHTNESS.

3. STABILITY OF THE DISPLAY SIZE CONFIRMATION:
a. INPUT 61.08 KHZ 1024x768 OF TIMING. SELECT FULL WHITE PATTERN.
b. ADJUST THE EXT-BRI. KEY TO 5FL AND THEN 30FL. THIS MUST NOT CAUSE A DIFFERENCE GREATER THAN 1.5 mm.

4. PURITY CONFIRMATION:
a. INPUT 61.08 KHZ 1024x768 OF THE TIMING. SELECT FULL WHITE PATTERN.
b. ADJUST THE EXT-BRI. KEY UNTIL THE RASTER DISAPPEARS. THEN ADJUST THE EXT-CONTRAST KEY UNTIL THE BRIGHTNESS IS 25 FL. USE VISUAL INSPECTION TO CONFIRM THE PURITY OF EACH R.G.B. AS FOLLOWS:
a. WHEN ONLY INPUTING R, MUST NOT APPEAR G.B.
b. WHEN ONLY INPUTING G, MUST NOT APPEAR R.B.
c. WHEN ONLY INPUTING B, MUST NOT APPEAR R.G.

5. VIDEO NOISE CONFIRMATION:
INPUT 61.08 KHZ 1024x768 OF THE TIMING. SELECT CROSS HATCH PATTERN OR FULL WHITE PATTERN, CHECK BY VISUAL INSPECTION FROM A DISTANCE OF 19 INCHS, WHETHER THE PICTURE HAS VIDEO NOISE OR NOT.

6. CHECK ALL INTERFACE CABLES ARE WELL CONNECTED AMONG THE PALLET,I2C

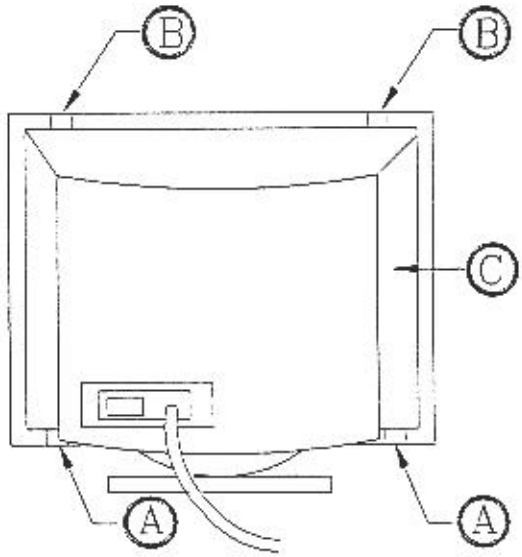
INTERFACE CARD,AND THE U.U.T DMC I2C CONNECTOR.

7. CLEAN THE C.R.T FACE OF THE U.U.T.
8. PUT THE U.U.T IN THE MARKED AREA ON THE TOP OF THE PALLET.
9. ALIGN THE U.U.T TO PARALLEL WITH THE PALLET.
10. POWER ON THE U.U.T AND BANG THE U.U.T TO FIND OUT IF THE SHOCK NOISE EXISTS.

(f) FOR C.A.S ALIGNMENT:
AFTER PER-CHECK ALL UNIT IS OK,THEN THE UNIT TO AUTO-STATION FOR C.A.S ADJUSTMENT AS BE LOW.

a. ADJUST H/V-RASTER CENTER.
b. ADJUST H/V-PHASE POSITION. | L-R | ≤ 2 mm, | T-B | ≤ 2 mm.
c. ADJUST H/V-SIZE. 260mm*195mm±2mm
d. ADJUST GEOMETIRIC OF THE PICTURE IS LESS THAN 1.5mm.
e. ADJUST VERTICAL LINEARITY OF PICTURE IS LESS THAN 7.5%.
| max. - min. / max. | x 100% ≤ 7.5%

Disassembly Instructions

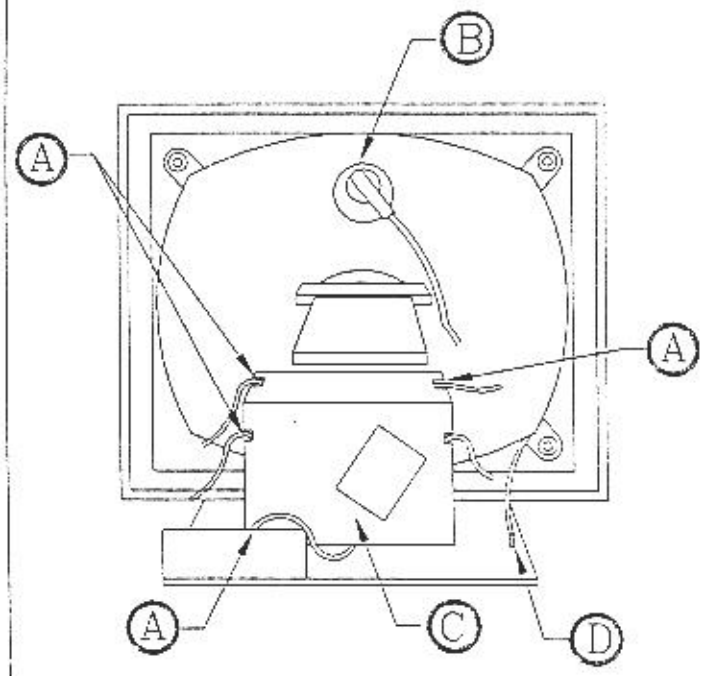


a. LOOSEN 2 SCREWS BY USING AIR DRIVER WITH (+) BIT. (SEE MARKED 'A')

b. PUSH OFF LOCK BY USING AIR DRIVER WITH (+) BIT. (SEE MARKED 'B')

c. REMOVE REAR COVER. (SEE MARKED 'C')

FIG.1



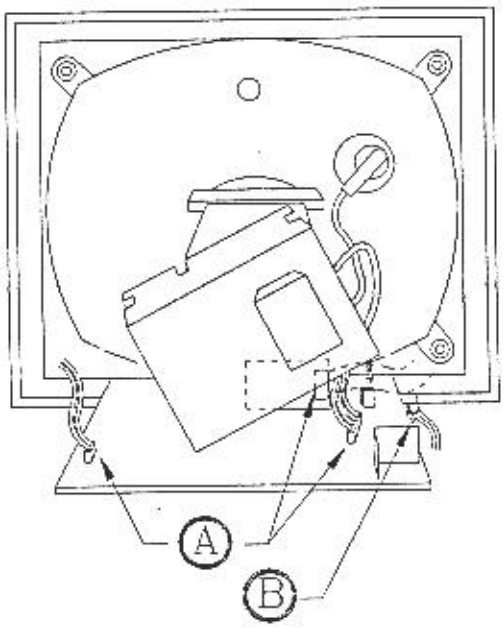
a. DISENGAGE 4 GROUND WIRE. (SEE MARKED 'A')

b. CAUTION :
IT HAS TO BE DISCHARGED BEFORE DISENGAGING HI-VOL CAP.
(SEE MARKED 'B')

c. REMOVE NECK SHIELD. (SEE MARKED 'C')

d. DISENGAGE 1 CONNECTOR PIN. (SEE MARKED 'D')

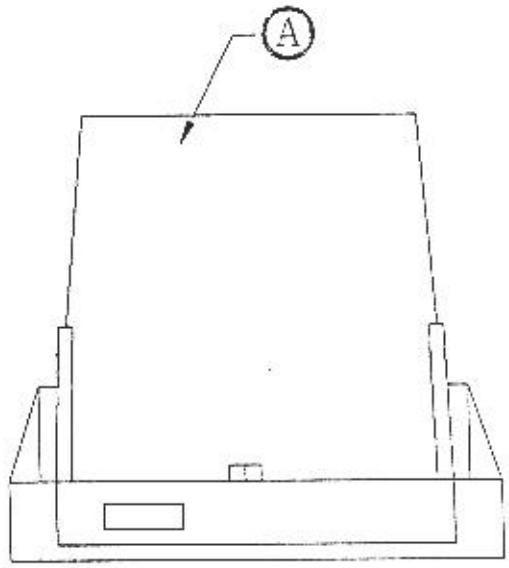
FIG.2



a. DISENGAGE 3 CONNECTOR PINS.
(SEE MARKED 'A')

b. LOOSEN 1 SCREW BY USING AIR DRIVER WITH (+) BIT.
(SEE MARKED 'B')

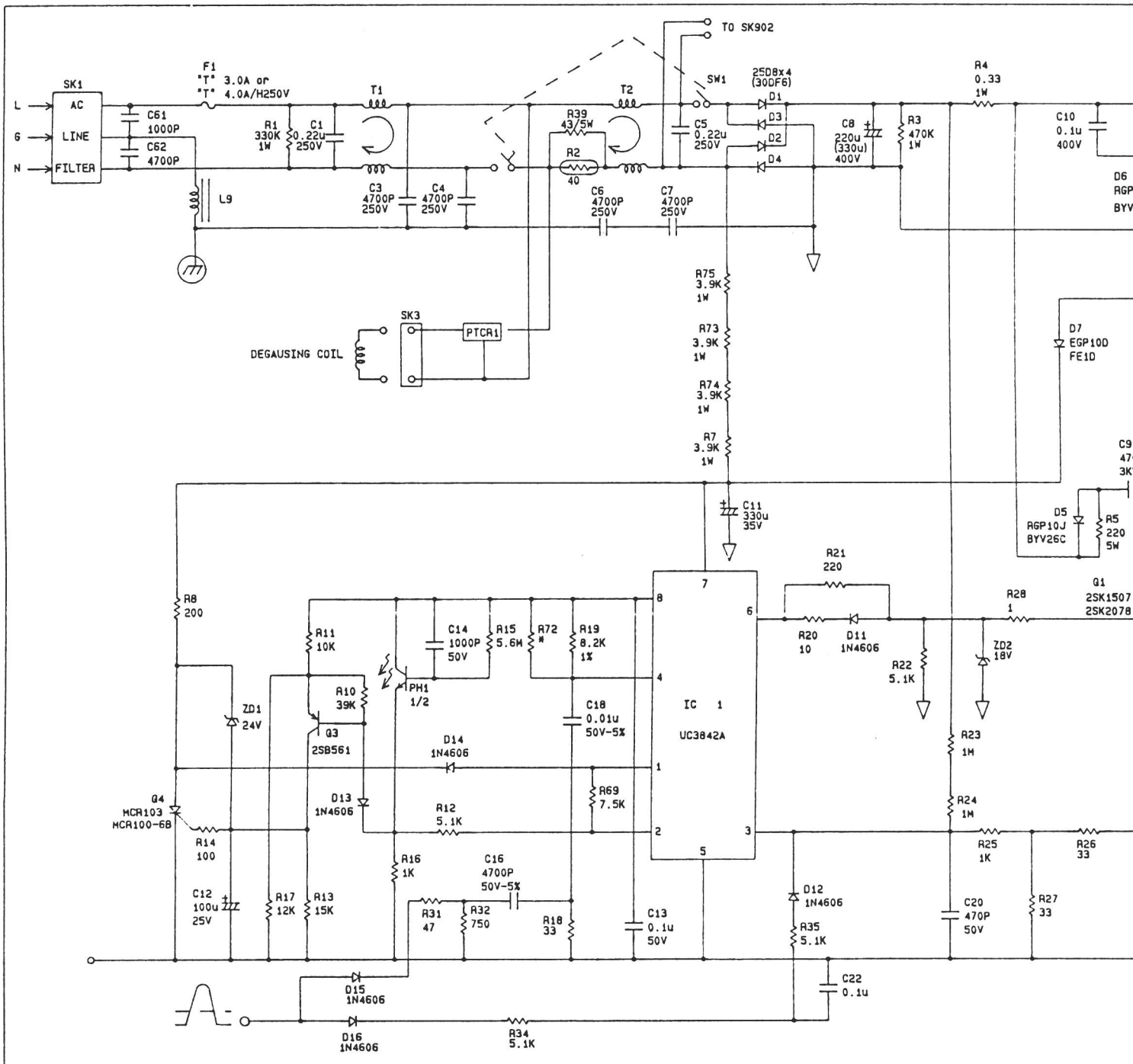
FIG.3

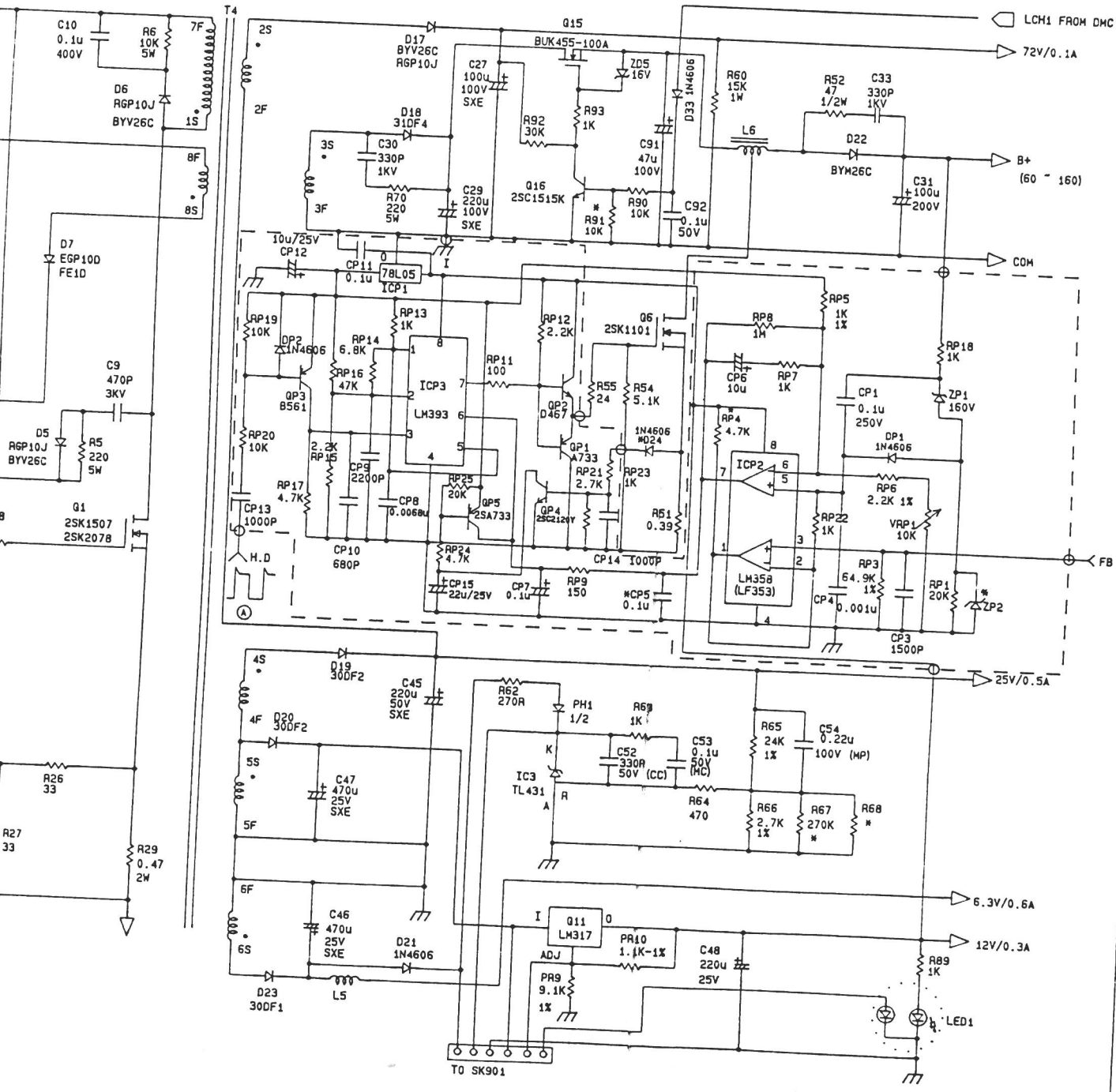


a. LAY DOWN THE SET ON ITS SIDE.
(AS FIG.4)

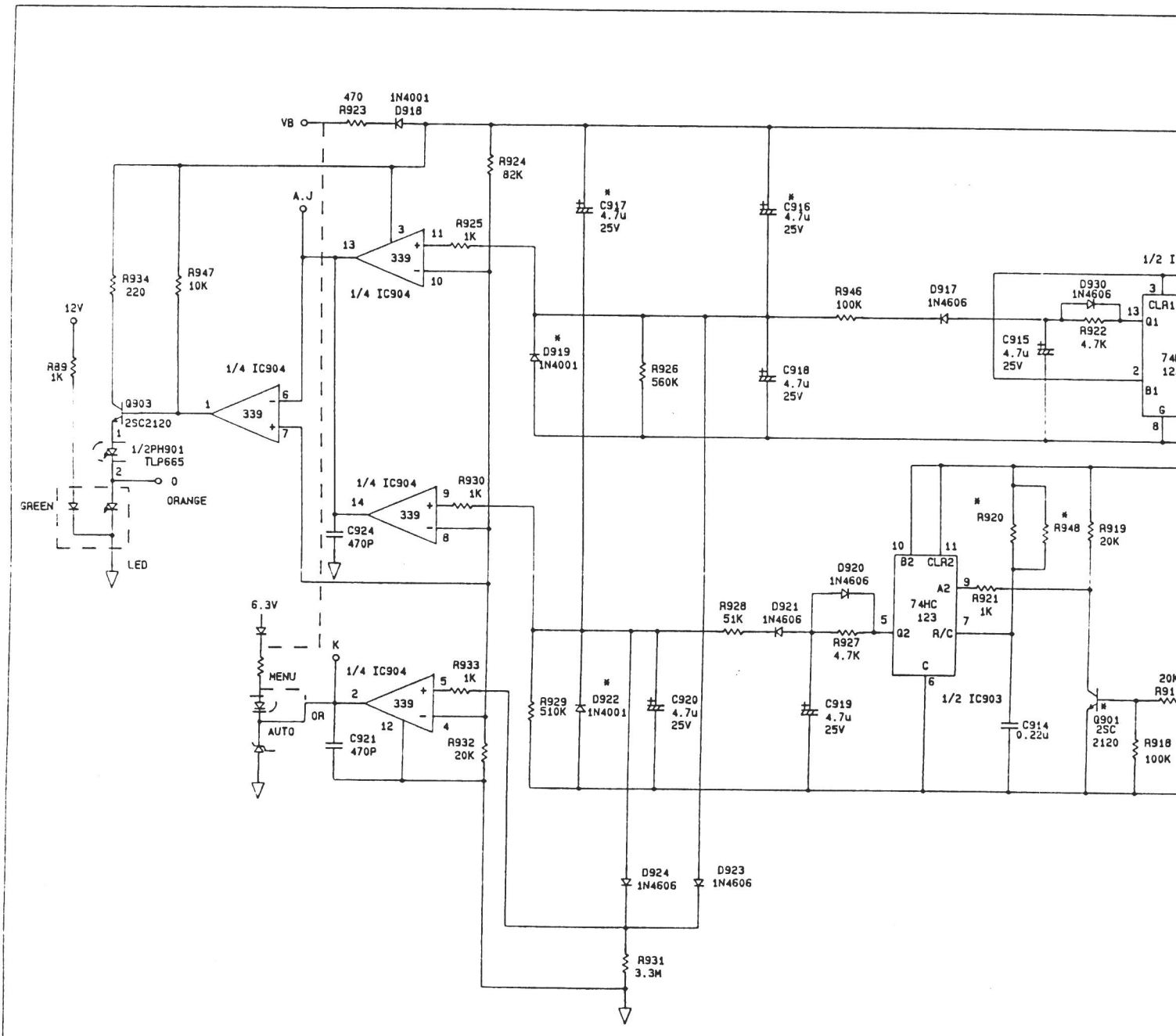
b. REMOVE MAIN PCB ASS'Y.
(SEE MARKED 'A')

FIG.4


TO SK902
SK1
AC
LINE
FILTER
L
G
N
F1
"T" 3.0A or
"T" 4.0A/H250V
C61
1000P
C62
4700P
L9
R1
330K
1W
C1
0.22u
250V
T1
T2
SW1
25D8x4
(30DF6)
D1
D3
D2
D4
R39
43/5W
R2
40
C5
0.22u
250V
C8
220u
(330u)
400V
R3
470K
1W
R4
0.33
1W
C10
0.1u
400V
C3
4700P
250V
C4
4700P
250V
C6
4700P
250V
C7
4700P
250V
SK3
PTCR1
DEGAUSING COIL
R75
3.9K
1W
R73
3.9K
1W
R74
3.9K
1W
R7
3.9K
1W
D7
EGP10D
FE1D
D5
RGP10J
BYV26C
R5
220
5W
C11
330u
35V
R8
200
R11
10K
C14
1000P
50V
R15
5.6M
R72
#
R19
8.2K
1%
PH1
1/2
R10
39K
Q3
2SB561
ZD1
24V
C18
0.01u
50V-5%
D14
1N4606
D13
1N4606
R69
7.5K
R12
5.1K
Q4
MCR103
MCR100-6B
R14
100
R16
1K
C16
4700P
50V-5%
C12
100u
25V
R17
12K
R13
15K
R31
47
R32
750
R18
33
C13
0.1u
50V
IC 1
UC3842A
7
8
6
4
1
2
3
5
R21
220
R20
10
D11
1N4606
R22
5.1K
R28
1
ZD2
18V
Q1
2SK1507
2SK2078
R23
1M
R24
1M
R25
1K
R26
33
D12
1N4606
R35
5.1K
C20
470P
50V
R27
33
C22
0.1u
D15
1N4606
D16
1N4606
R34
5.1K

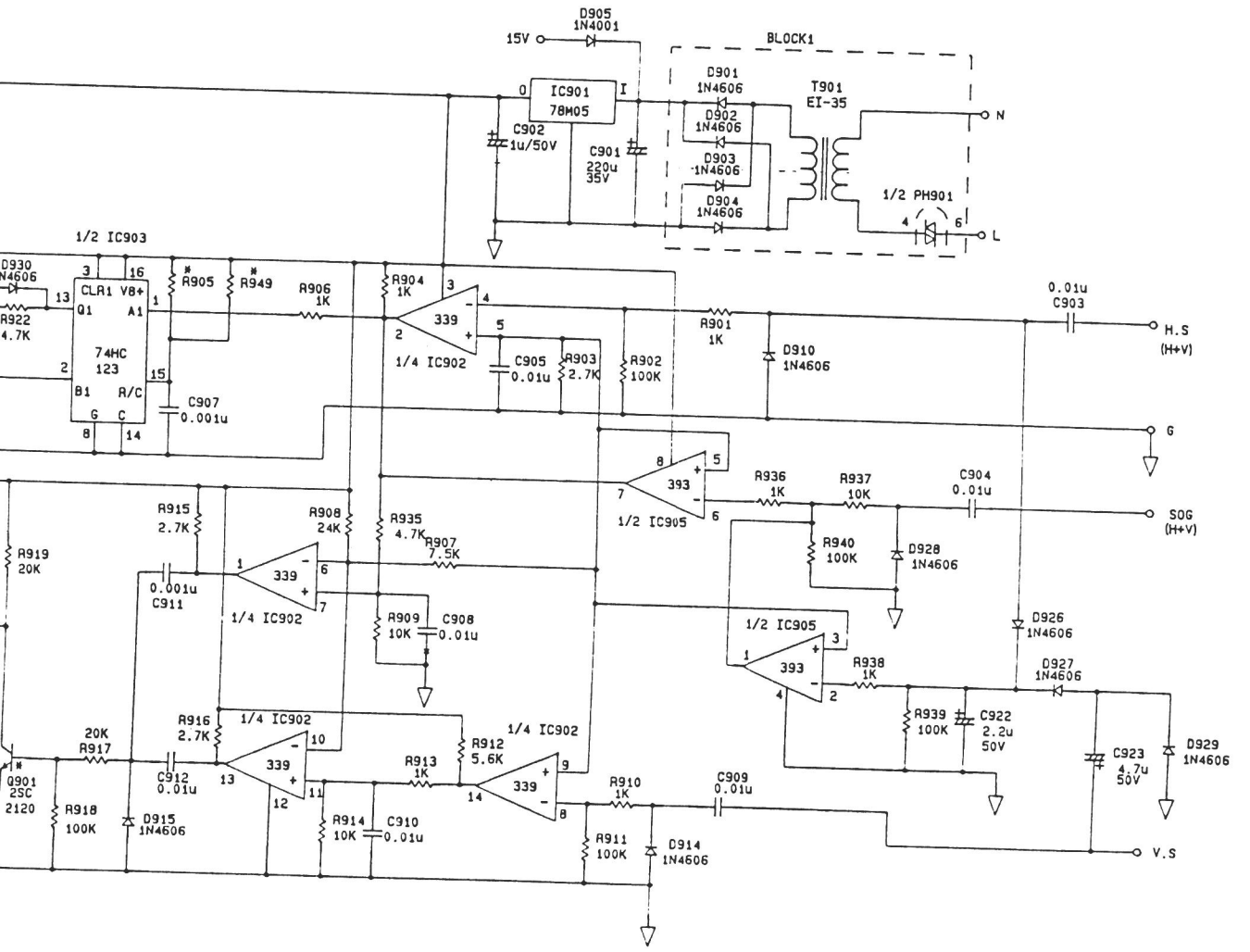


ViewSonic Corporation				
DRAWING DATE	TOLERANCE		SCALE	UNIT
08-03-'93	DIM	ANGLE	/	MM
(N-07159309EG)	+ -	+ -		
DRAWER	SHEET		DRAWING NAME	FILENAME
	1 OF 1		POWER SUPPLY	
MODEL NO.: 1500D				



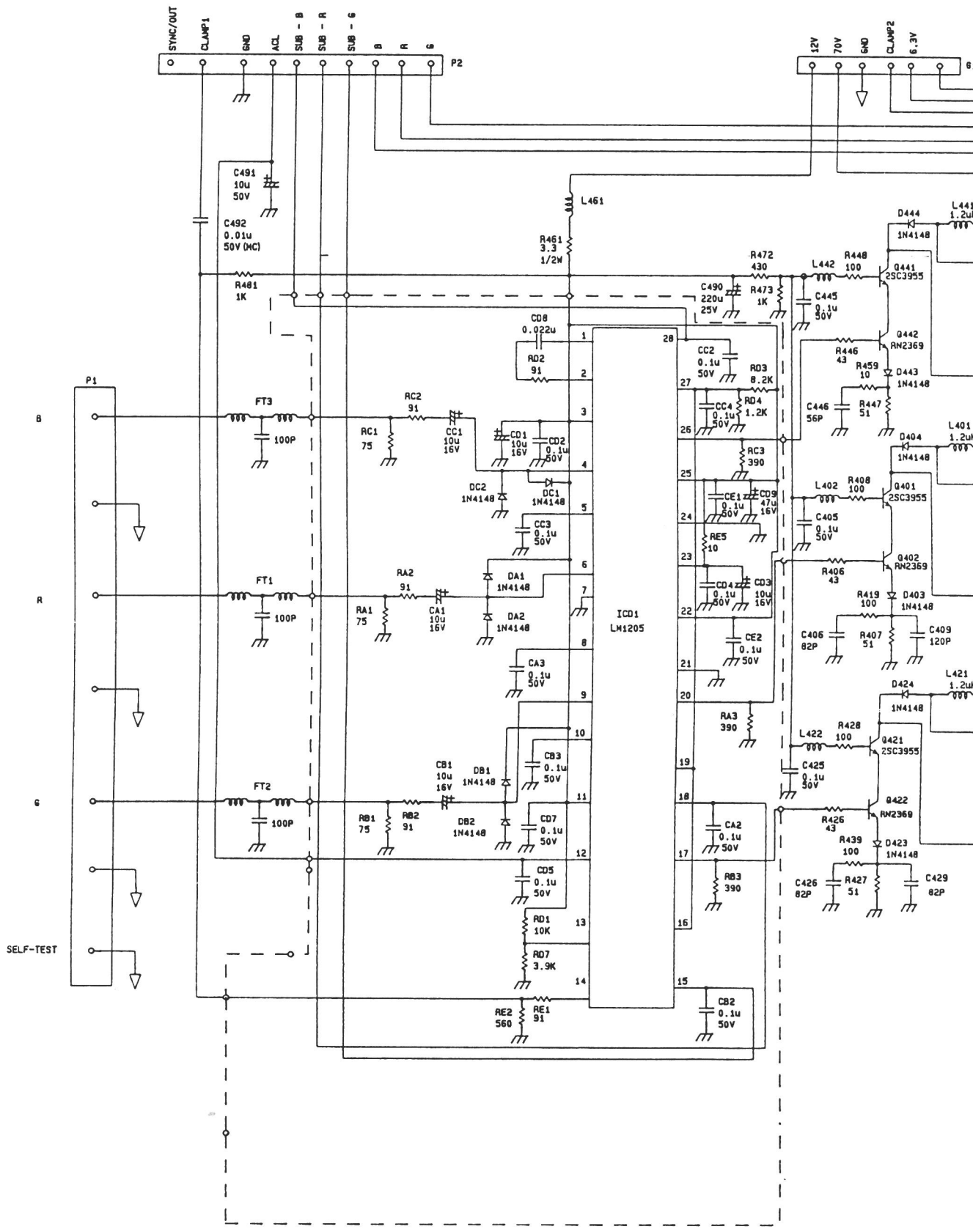
* OPTION RISISTANCE FOR IC903 TRIGGER TIM

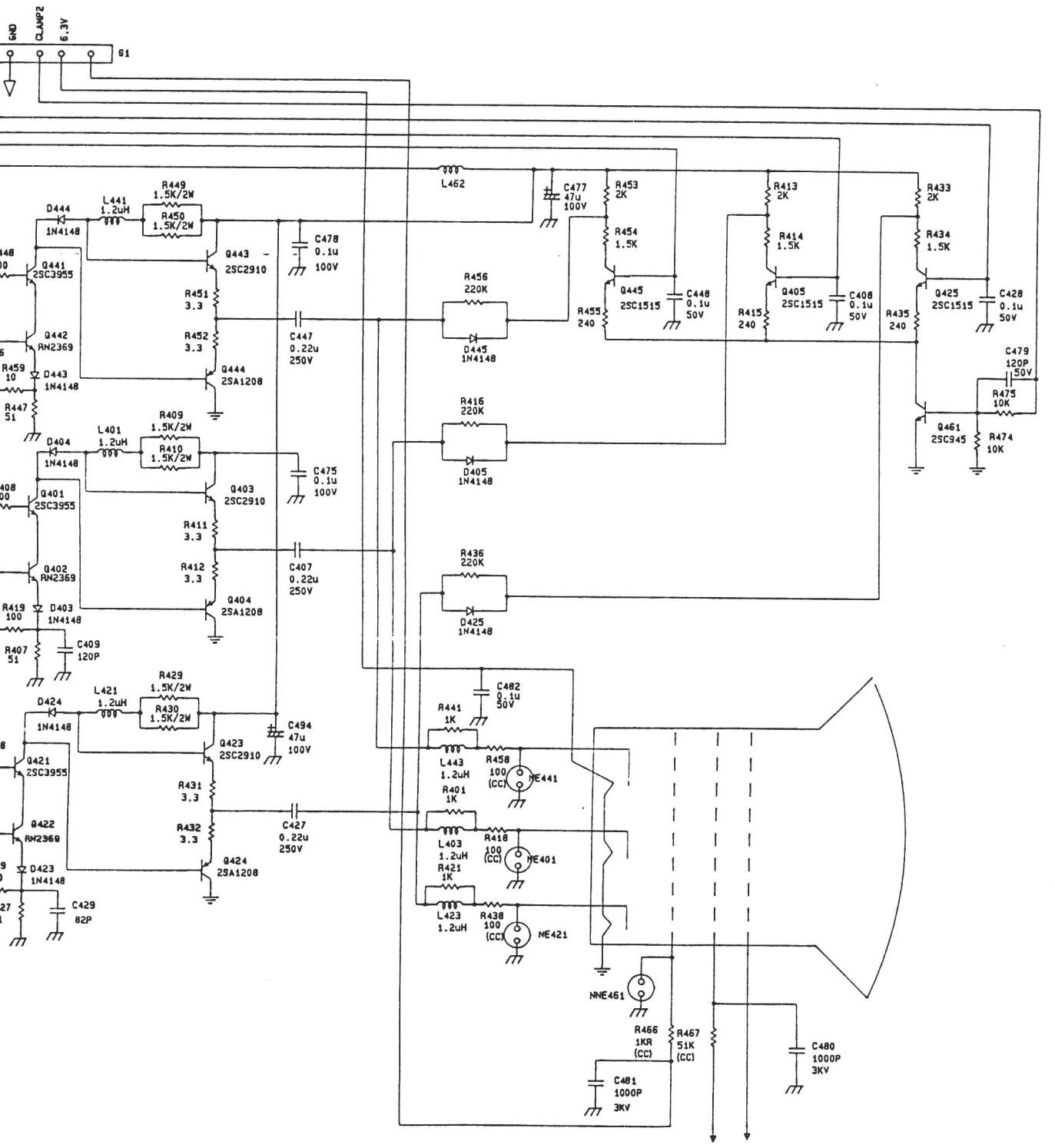
VENDOR	R905	R920
HITACHI	27K	150K
TOSHIBA	33K	150K
HARRIS	75K	360K
ST	47K	330K
PHILIPS	75K	330K



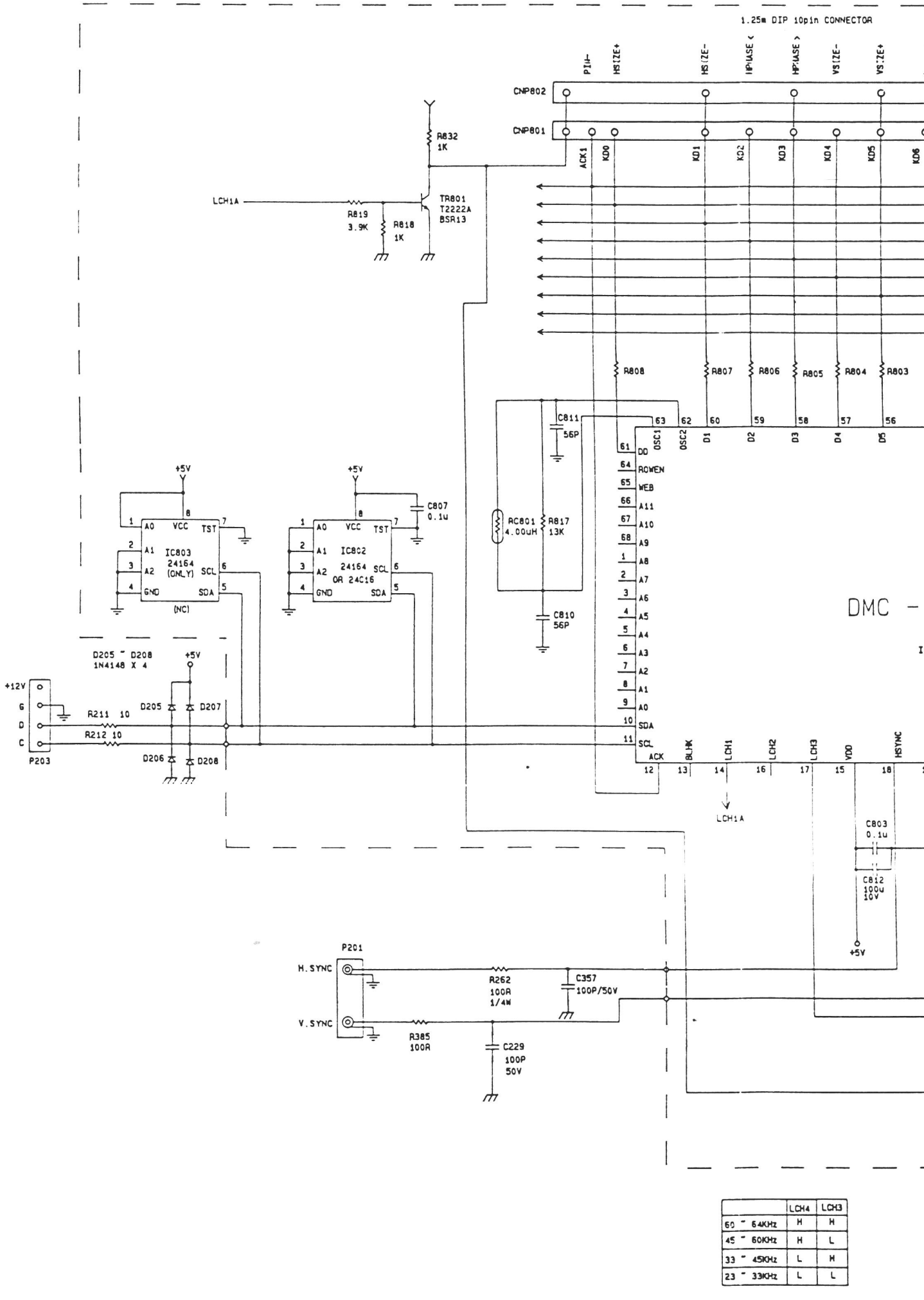
TRIGGER TIMING

ViewSonic Corporation				
DRAWING DATE	TOLERANCE		SCALE	UNIT
07-31-'93 (N-07279304EG)	DIM + -	ANGLE + -	/	MM
DRAWER	SHEET		DRAWING NAME	FILE NAME
	OF		POWER SAVING	
MODEL NO.: 1500D				

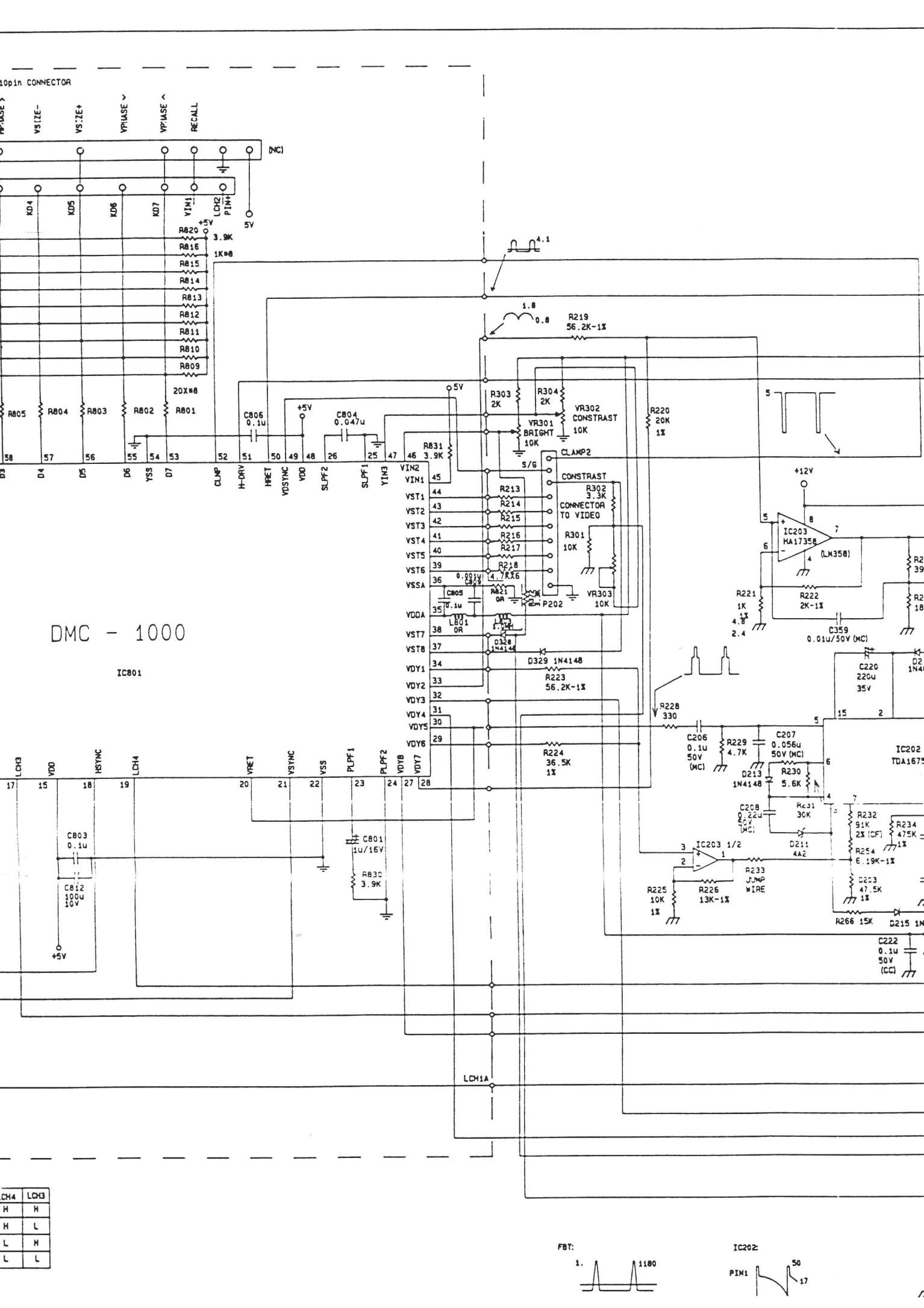

SYNC/OUT
CLAMP1
GND
ACL
SUB - B
SUB - R
SUB - G
B
R
G
P2
12V
70V
GND
CLAMP2
6.3V
C491 10u 50V
C492 0.01u 50V (MC)
R481 1K
L461
R461 3.3 1/2W
R472 430
R473 1K
C490 220u 25V
L442
R448 100
Q441 2SC3955
C445 0.1u 50V
D444 1N4148
L441 1.2uH
Q442 RN2369
R446 43
R459 10
D443 1N4148
C446 56P
R447 51
D404 1N4148
L401 1.2uH
L402
R408 100
Q401 2SC3955
C405 0.1u 50V
Q402 RN2369
R406 43
R419 100
D403 1N4148
C406 82P
R407 51
C409 120P
D424 1N4148
L421 1.2uH
L422
R428 100
Q421 2SC3955
C425 0.1u 50V
Q422 RN2369
R426 43
R439 100
D423 1N4148
C426 82P
R427 51
C429 82P
P1
B
R
G
SELF-TEST
FT3
FT1
FT2
100P
RC2 91
RC1 75
CC1 10u 16V
CD1 10u 16V
CD2 0.1u 50V
DC2 1N4148
DC1 1N4148
CC3 0.1u 50V
RA2 91
RA1 75
CA1 10u 16V
DA1 1N4148
DA2 1N4148
CA3 0.1u 50V
CB1 10u 16V
DB1 1N4148
DB2 1N4148
CB3 0.1u 50V
RB1 75
RB2 91
CD7 0.1u 50V
CD5 0.1u 50V
RD1 10K
RD7 3.9K
RE2 560
RE1 91
CB2 0.1u 50V
CD8 0.022u
RD2 91
ICD1 LM1205
CC2 0.1u 50V
RD3 8.2K
CC4 0.1u 50V
RD4 1.2K
RC3 390
CE1 0.1u 50V
CD9 47u 16V
RE5 10
CD4 0.1u 50V
CD3 10u 16V
CE2 0.1u 50V
RA3 390
CA2 0.1u 50V
RB3 390



ViewSonic Corporation				
DRAWING DATE	TOLERANCE		SCALE	UNIT
08-06-'93 (N-07219301EG)	DIM + -	ANGLE + -	/	MM
DRAWER	SHEET		DRAWING NAME	FILENAME
	OF		NECK PCB	
MODEL NO.: 1500D				



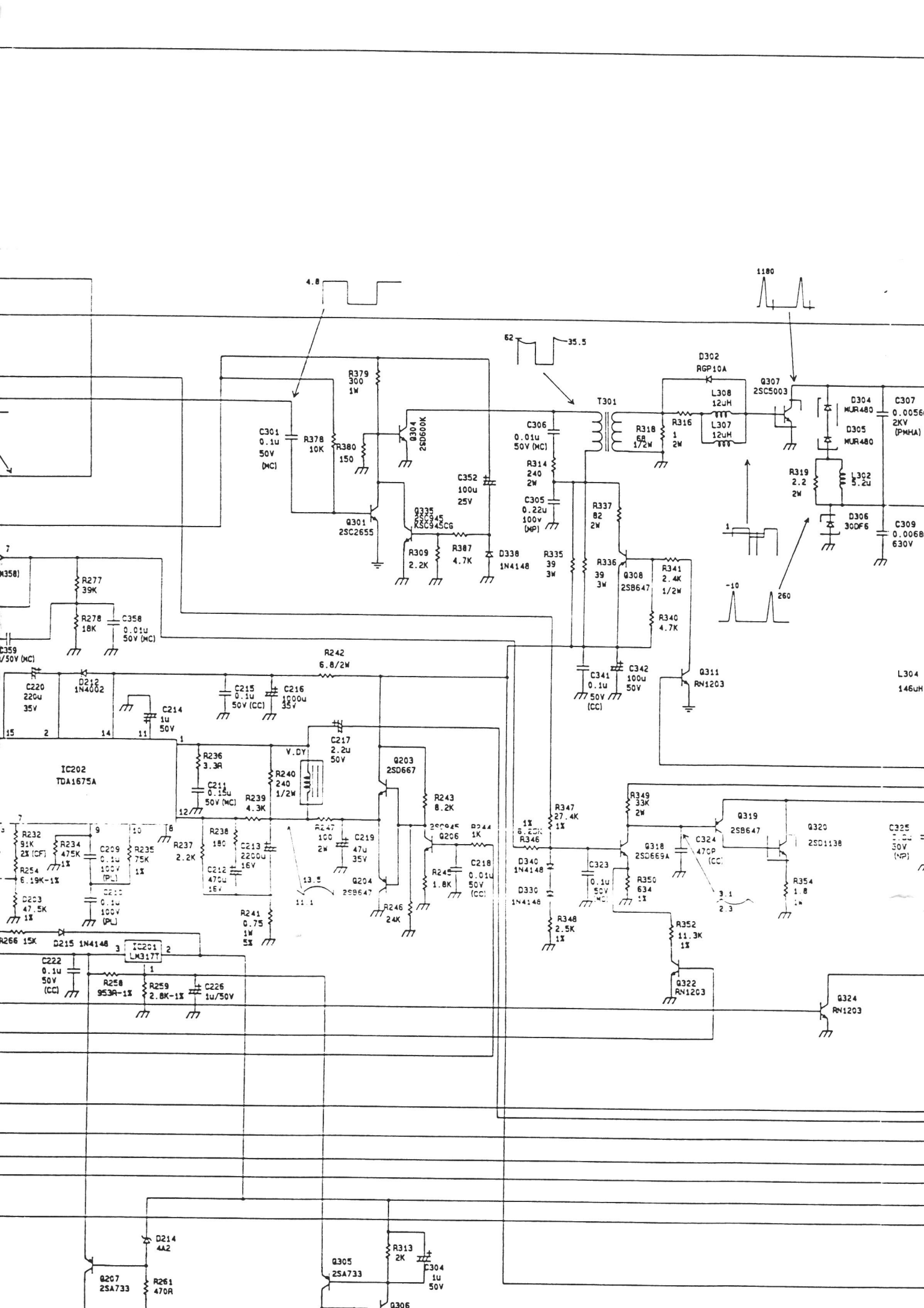
	LCH4	LCH3
60 ~ 64KHz	H	H
45 ~ 60KHz	H	L
33 ~ 45KHz	L	H
23 ~ 33KHz	L	L

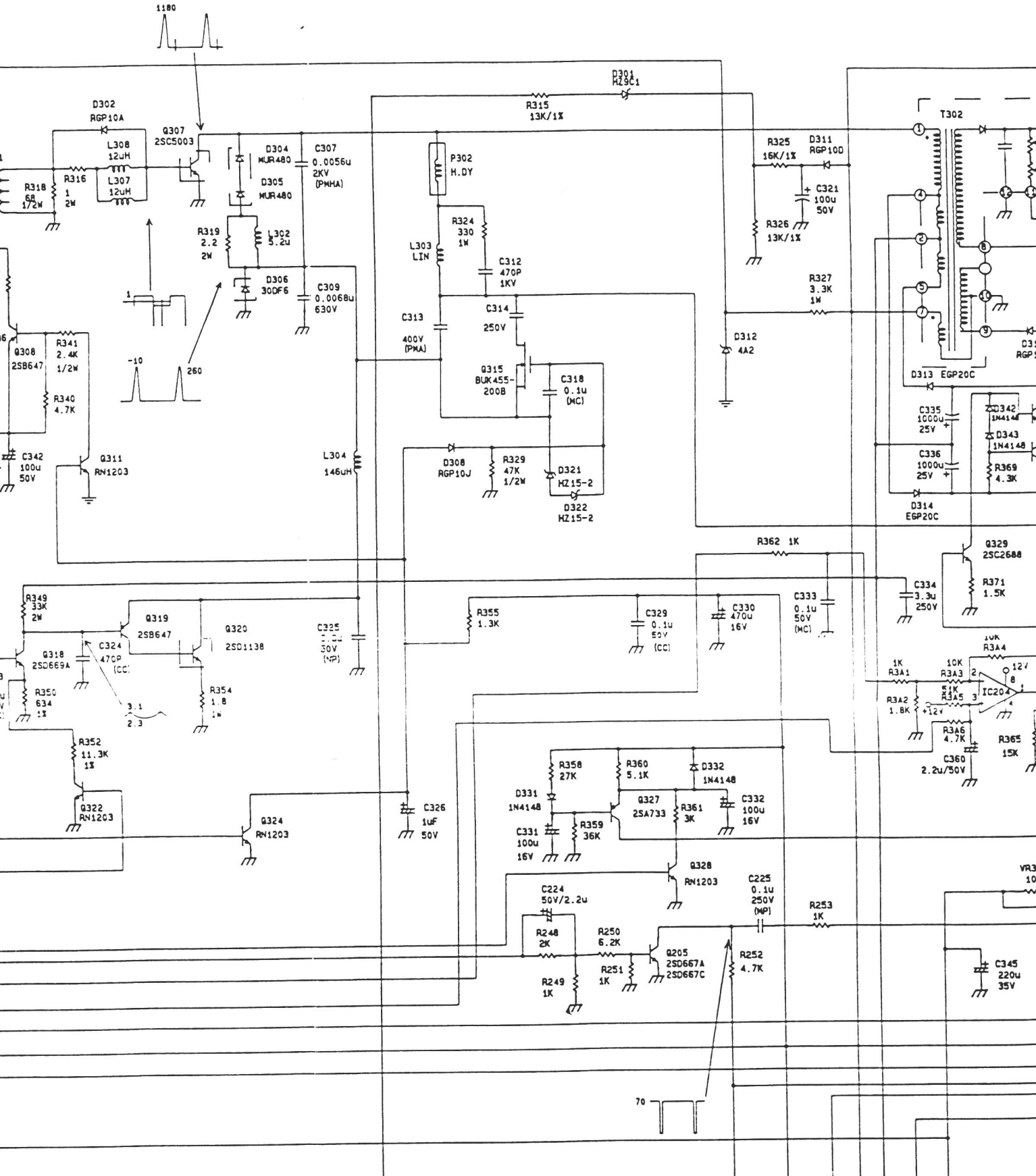


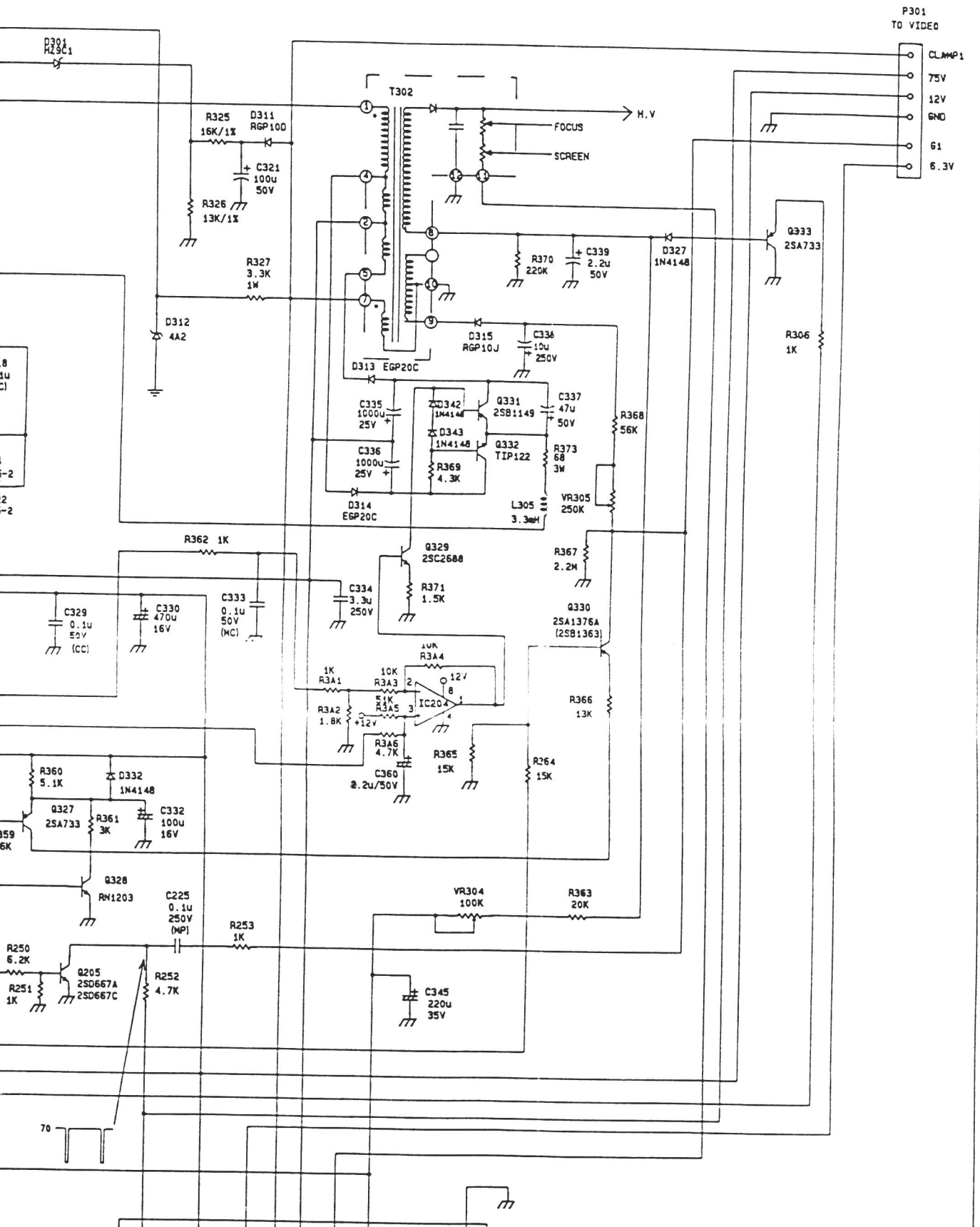
LCH4	LCH3
H	H
H	L
L	H
L	L

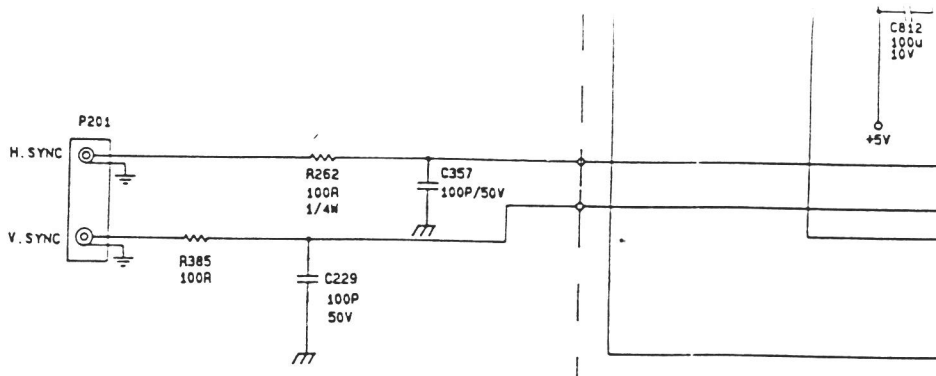
FBT:

IC202:


4.8
1180
62
35.5
T301
D302
RGP10A
Q307
2SC5003
L308
12uH
L307
12uH
D304
MUR480
D305
MUR480
C307
0.0056
2KV
(PMMA)
C306
0.01u
50V (MC)
R379
300
1W
C301
0.1u
50V
(MC)
R378
10K
R380
150
Q304
2SD600K
Q301
2SC2655
Q335
2SC945
KSC945CG
C352
100u
25V
R314
240
2W
C305
0.22u
100v
(MP)
R318
68
1/2W
R316
1
2W
R319
2.2
2W
L302
5.2u
D306
30DF6
C309
0.0068
630V
R309
2.2K
R387
4.7K
D338
1N4148
R335
39
3W
R337
82
2W
R336
39
3W
Q308
2SB647
R341
2.4K
1/2W
R340
4.7K
-10
260
R277
39K
R278
18K
C358
0.01u
50V (MC)
C359
/50V (MC)
R242
6.8/2W
C220
220u
35V
D212
1N4002
C214
1u
50V
C215
0.1u
50V (CC)
C216
1000u
35V
C341
0.1u
50V
(CC)
C342
100u
50V
Q311
RN1203
L304
146uH
IC202
TDA1675A
R236
3.3R
C211
0.15u
50V (MC)
R239
4.3K
R240
240
1/2W
V.DY
C217
2.2u
50V
Q203
2SD667
R243
8.2K
R232
91K
2% (CF)
R234
475K
1%
C209
0.1u
100V
(PL)
R235
75K
1%
R254
6.19K-1%
C210
0.1u
100V
(PL)
D203
47.5K
1%
R237
2.2K
R238
180
C213
2200u
16V
C212
470u
16V
R247
100
2W
C219
47u
35V
Q204
2SB647
R241
0.75
1W
5%
R246
24K
Q206
R245
1.8K
C218
0.01u
50V
(CC)
R244
1K
R347
27.4K
1%
R346
1%
R349
33K
2W
Q319
2SB647
Q320
2SD1138
Q318
2SD669A
C324
470P
(CC)
D340
1N4148
D330
1N4148
C323
0.1u
50V
(MC)
R350
634
1%
R348
2.5K
1%
R352
11.3K
1%
R354
1.8
1W
Q322
RN1203
Q324
RN1203
R266 15K
D215 1N4148
IC201
LM317T
C222
0.1u
50V
(CC)
R258
953R-1%
R259
2.8K-1%
C226
1u/50V
D214
4A2
Q207
2SA733
R261
470R
Q305
2SA733
R313
2K
C304
1u
50V
Q306


1180
D302
RGP10A
Q307
2SC5003
L308
12uH
L307
12uH
R318
6R
1/2W
R316
1
2W
D304
MUR480
D305
MUR480
C307
0.0056u
2KV
(PMMA)
R319
2.2
2W
L302
5.2u
D306
30DF6
C309
0.0068u
630V
-10
260
Q308
2SB647
R341
2.4K
1/2W
R340
4.7K
C342
100u
50V
Q311
RN1203
L304
146uH
D301
HZ9C1
R315
13K/1%
P302
H.DY
L303
LIN
R324
330
1W
C312
470P
1KV
C313
400V
(PMA)
C314
250V
Q315
BUK455-
200B
C318
0.1u
(MC)
D308
RGP10J
R329
47K
1/2W
D321
HZ15-2
D322
HZ15-2
R325
16K/1%
D311
RGP10D
C321
100u
50V
R326
13K/1%
R327
3.3K
1W
D312
4A2
T302
D313 EGP20C
C335
1000u
25V
D342
1N4148
D343
1N4148
C336
1000u
25V
R369
4.3K
D314
EGP20C
R362 1K
Q329
2SC2688
C334
3.3u
250V
R371
1.5K
R349
33K
2W
Q319
2SB647
Q320
2SD1138
C325
30V
(NP)
Q318
2SD669A
C324
470P
(CC)
R350
634
1%
R354
1.8
1W
3.1
2.3
R352
11.3K
1%
Q322
RN1203
Q324
RN1203
C326
1uF
50V
R355
1.3K
C329
0.1u
50V
(CC)
C330
470u
16V
C333
0.1u
50V
(MC)
R3A4
10K
1K
R3A1
10K
R3A3
51K
R3A5
IC204
R3A2
1.8K
+12V
R3A6
4.7K
R365
15K
C360
2.2u/50V
R358
27K
R360
5.1K
D332
1N4148
D331
1N4148
Q327
2SA733
R361
3K
C332
100u
16V
C331
100u
16V
R359
36K
Q328
RN1203
C224
50V/2.2u
C225
0.1u
250V
(NP)
R253
1K
R248
2K
R250
6.2K
R249
1K
R251
1K
Q205
2SD667A
2SD667C
R252
4.7K
C345
220u
35V
70


P301
TO VIDEO
CLAMP1
75V
12V
GND
G1
6.3V
T302
H.V
FOCUS
SCREEN
D301
R325
16K/1%
D311
RGP10D
C321
100u
50V
R326
13K/1%
R327
3.3K
1W
D312
4A2
D313 EGP20C
D315
RGP10J
C338
10u
250V
D314
EGP20C
C335
1000u
25V
C336
1000u
25V
D342
1N4148
D343
1N4148
Q331
2SB1149
Q332
TIP122
C337
47u
50V
R369
4.3K
R373
68
3W
L305
3.3mH
VR305
250K
R368
56K
R370
220K
C339
2.2u
50V
D327
1N4148
Q333
2SA733
R306
1K
R362 1K
C329
0.1u
50V
(CC)
C330
470u
16V
C333
0.1u
50V
(MC)
C334
3.3u
250V
Q329
2SC2688
R371
1.5K
R367
2.2M
Q330
2SA1376A
(2SB1363)
R3A4
1K
R3A1
10K
R3A3
51K
R3A5
R3A2
1.8K
+12V
IC204
12V
R3A6
4.7K
C360
0.2u/50V
R365
15K
R264
15K
R366
13K
R360
5.1K
D332
1N4148
Q327
2SA733
R361
3K
C332
100u
16V
Q328
RN1203
C225
0.1u
250V
(MP)
R253
1K
VR304
100K
R363
20K
R250
6.2K
R251
1K
Q205
2SD667A
2SD667C
R252
4.7K
C345
220u
35V
70



	LCH4	LCH3
60 ~ 64KHz	H	H
45 ~ 60KHz	H	L
33 ~ 45KHz	L	H
23 ~ 33KHz	L	L

ECO/ECN	DESCRIPTION	EFFECTIVE
M-03199303ED	R387 30K ⇒ 4.7K	03-19-93
	R252 1K ⇒ 4.7K	
	R309 150R ⇒ 2.2K	
	R379 150R ⇒ 300R	
	R314 240 (1W) ⇒ 240 (2W)	
	DEL R377	
	L307, 308 30u ⇒ 27u	
	C352 470u ⇒ 220u	
	DEL VR307	
	C323 0.068u ⇒ 0.1u	
	ADD C333	
	R253 1K ⇒ 20K	
	ADD R248, C353	
	R378 2K ⇒ 10K	
M-03229306ED	DEL C333	03-22-93

C812
100u
10V

+5V

3.9K

R225
10K
1%

R226
13K-1%

JUMP
WIRE

D203
47.5K
1%

R266 15K

D215

C222
0.1u
50V
(CC)

LCH1A

CH4	LCH3
H	H
H	L
L	H
L	L

FBT:

1. 1180

4. -150 130

5. 138 -117

7. 33.5 -7

9. -21 -194

IC202:

PIN1 50 17

2 50 -24

3 5.1 4.0

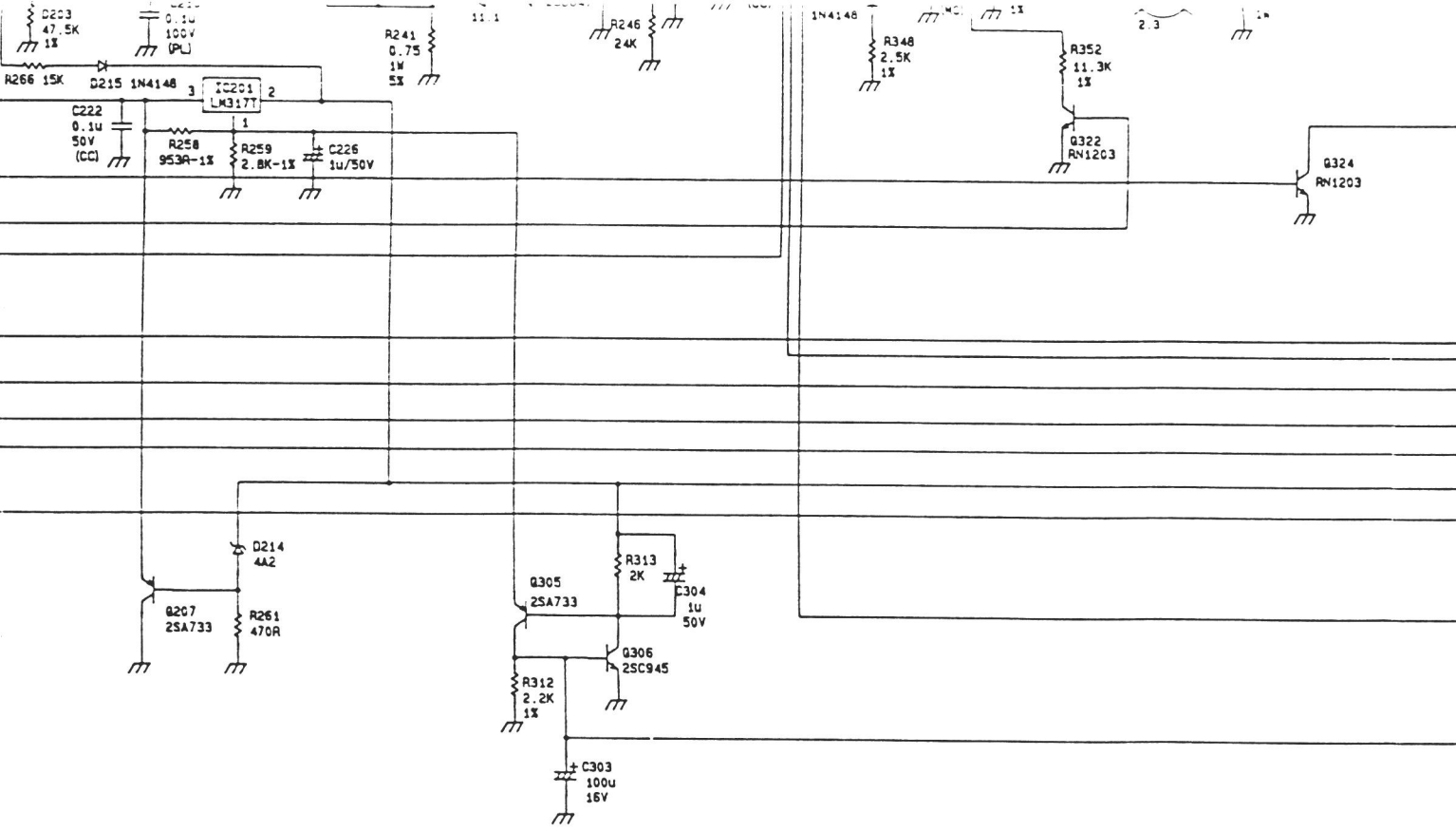
7. 6.8V

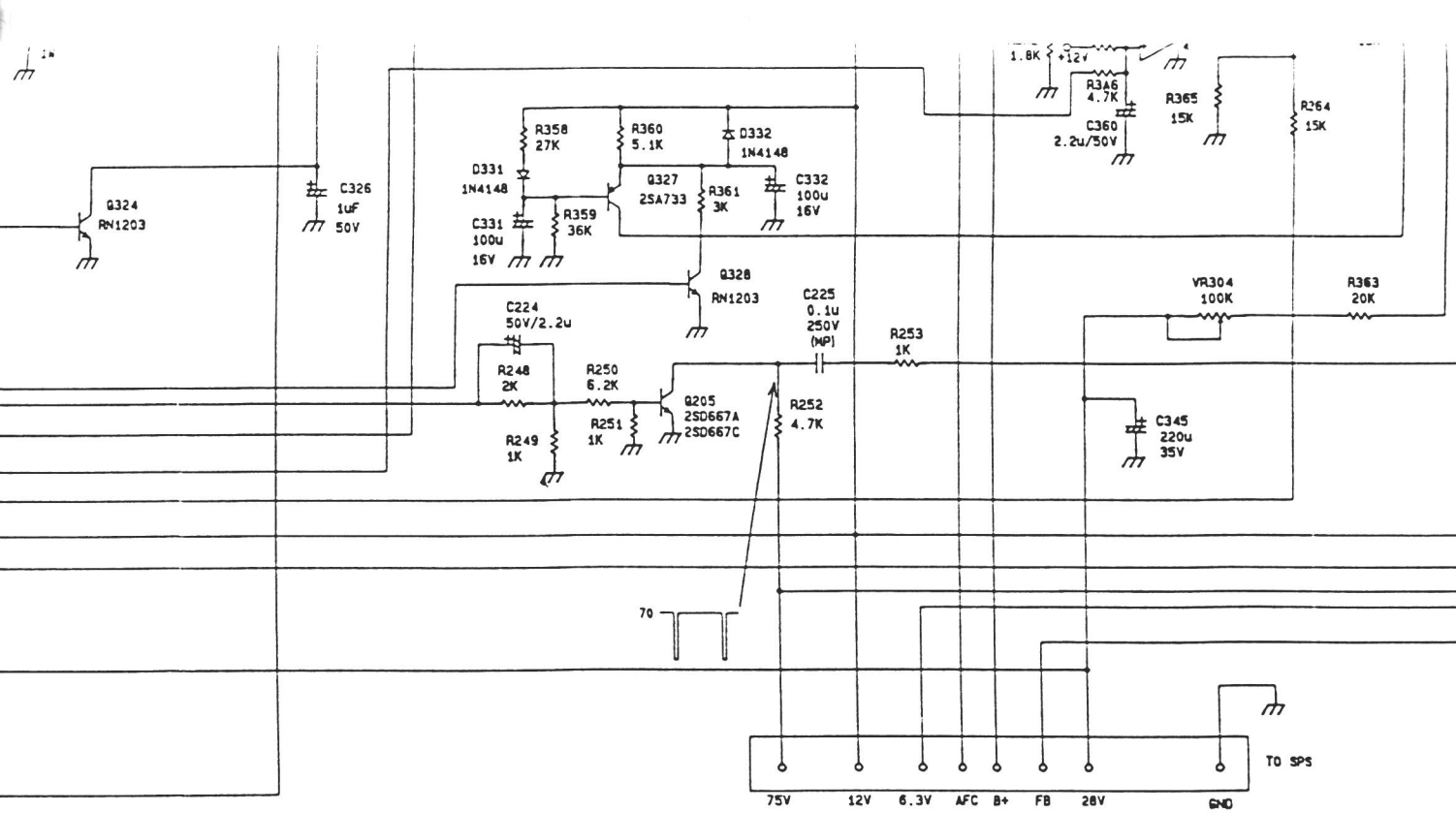
9. 7.5 0.6

10. 8.3 1.4

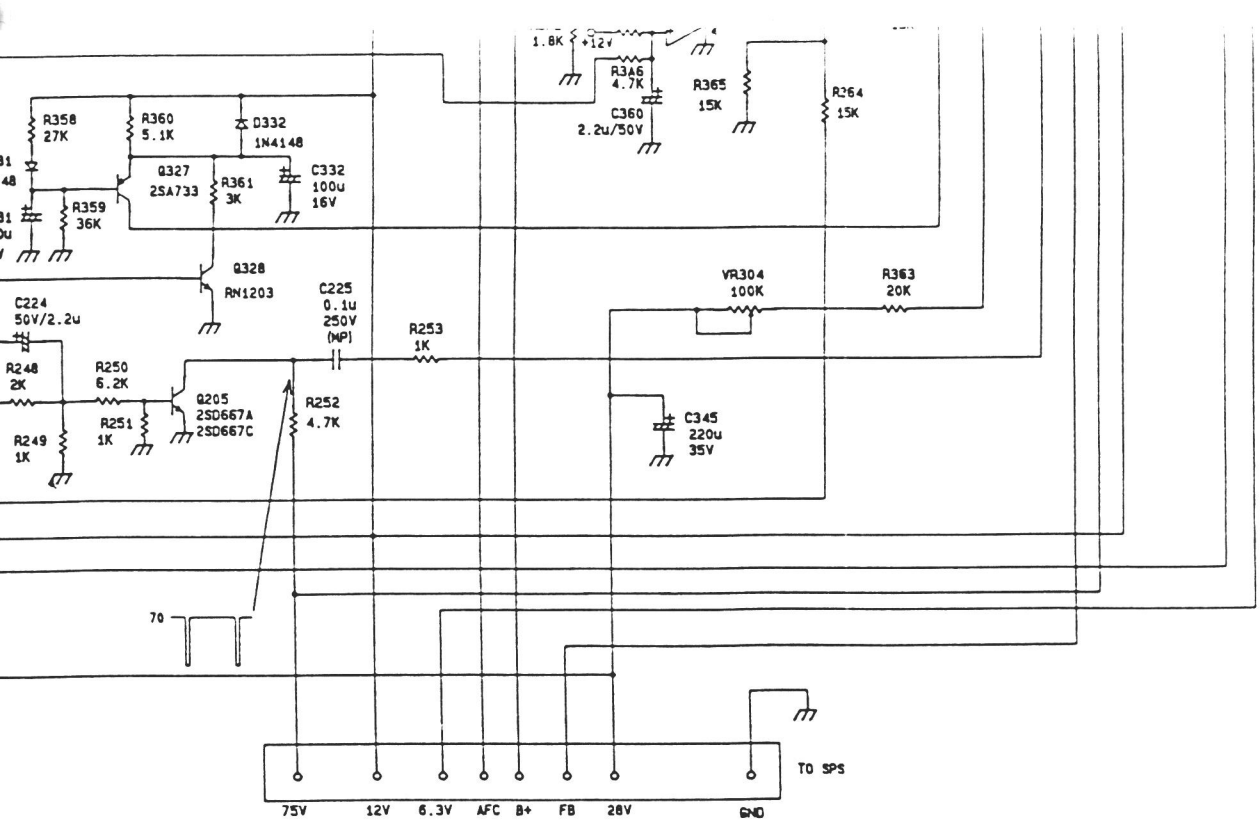
11. 4.5V

12. 5.1 3.8

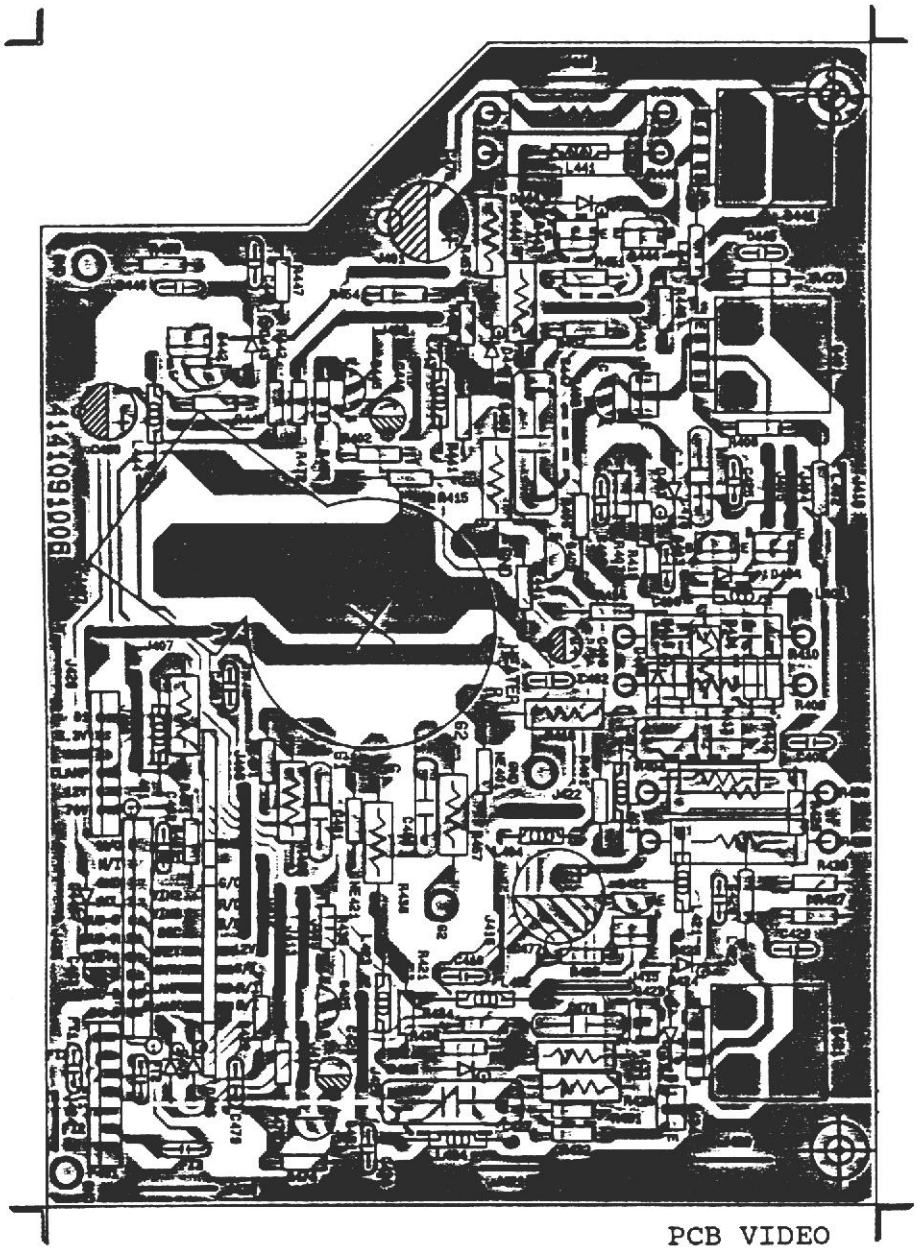

D203
47.5K
1%
R266 15K
D215 1N4148
C222
0.1u
50V
(CC)
R258
953A-1%
R259
2.8K-1%
C226
1u/50V
IC201
LM317T
R241
0.75
1W
5%
R246
24K
R348
2.5K
1%
R352
11.3K
1%
Q322
RN1203
Q324
RN1203
D214
4A2
Q207
2SA733
R261
470R
Q305
2SA733
R313
2K
C304
1u
50V
Q306
2SC945
R312
2.2K
1%
C303
100u
16V



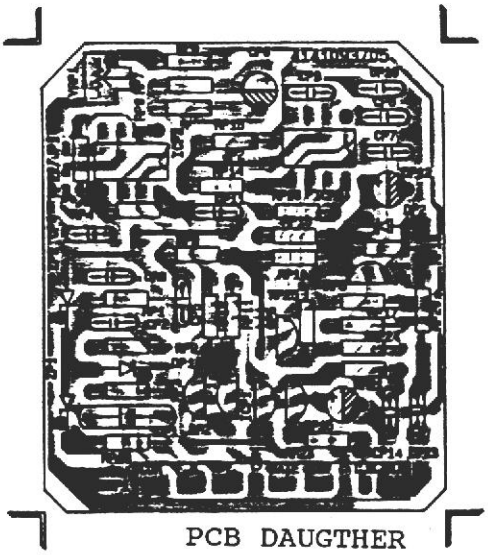
	ViewSonic Co
DRAWING DATE	TOLERANCE
08-16-'93 (0-07319302ET)	DIM: + - / ANGLE: + -
DRAWER	SHEET
	OF
MODEL NO.: 1500D	



ViewSonic Corporation				
DRAWING DATE	TOLERANCE		SCALE	UNIT
08-16-'93 (0-07319302ET)	DIM + -	ANGLE + -	/	MM
DRAWER	SHEET		DRAWING NAME	FILENAME
	OF		DEF	
MODEL NO.: 1500D				

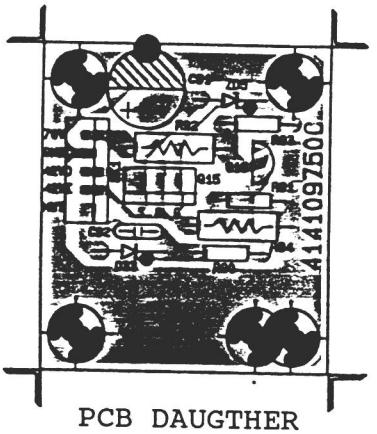


PCB VIDEO

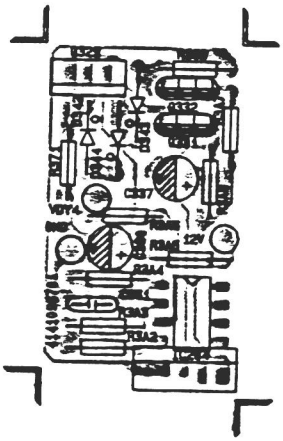


PCB DAUGTHER

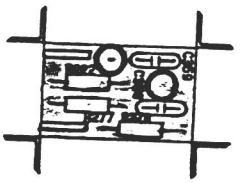
PCB LAYOUT DRAWING



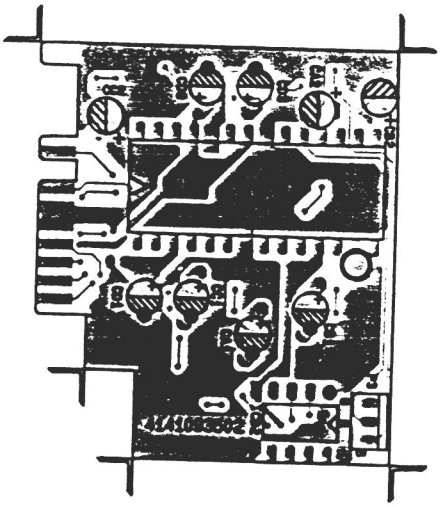
PCB DAUGTHER



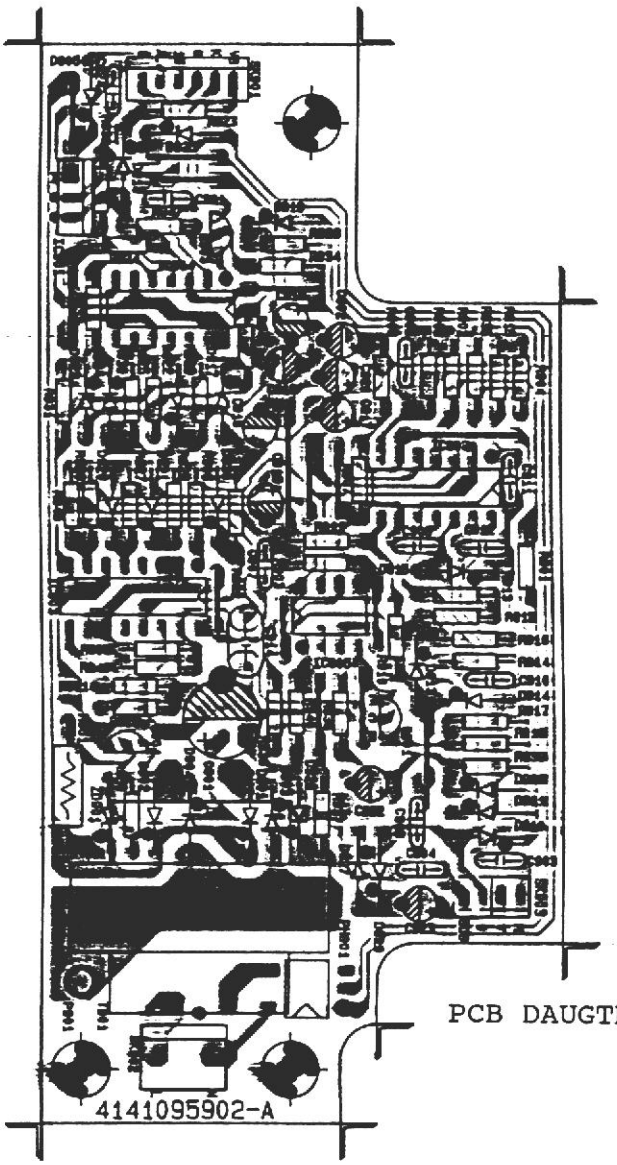
PCB DAUGTHER



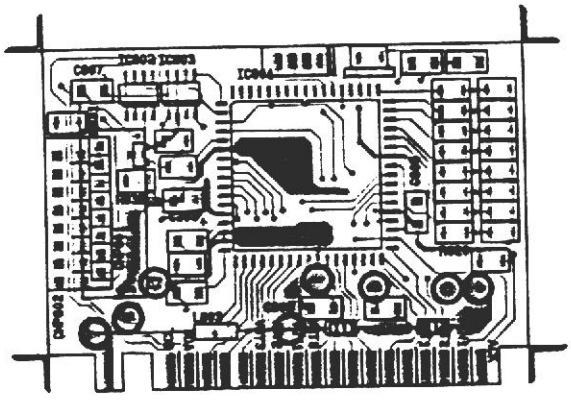
PCB DAUGTHER



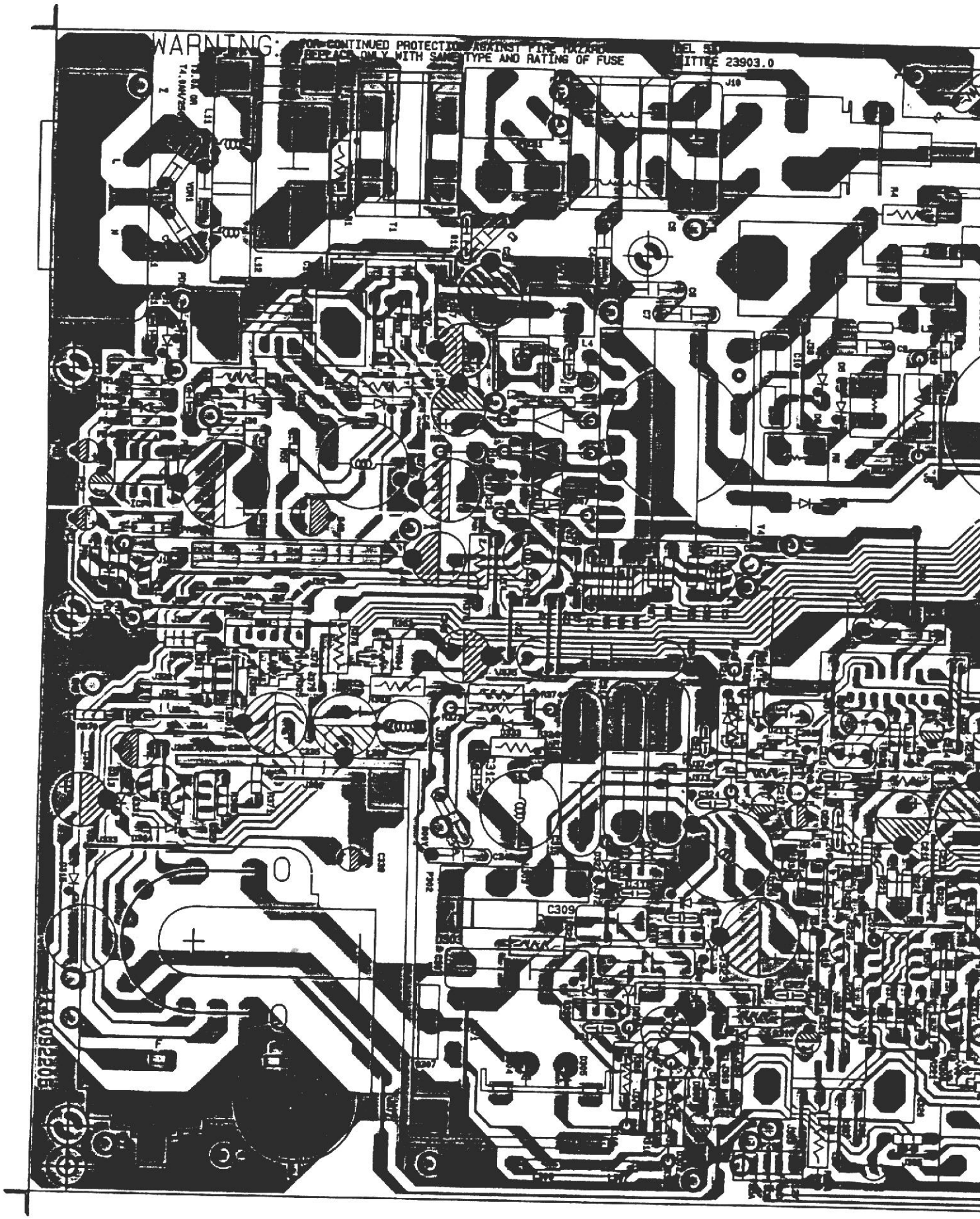
PCB VIDEO IC

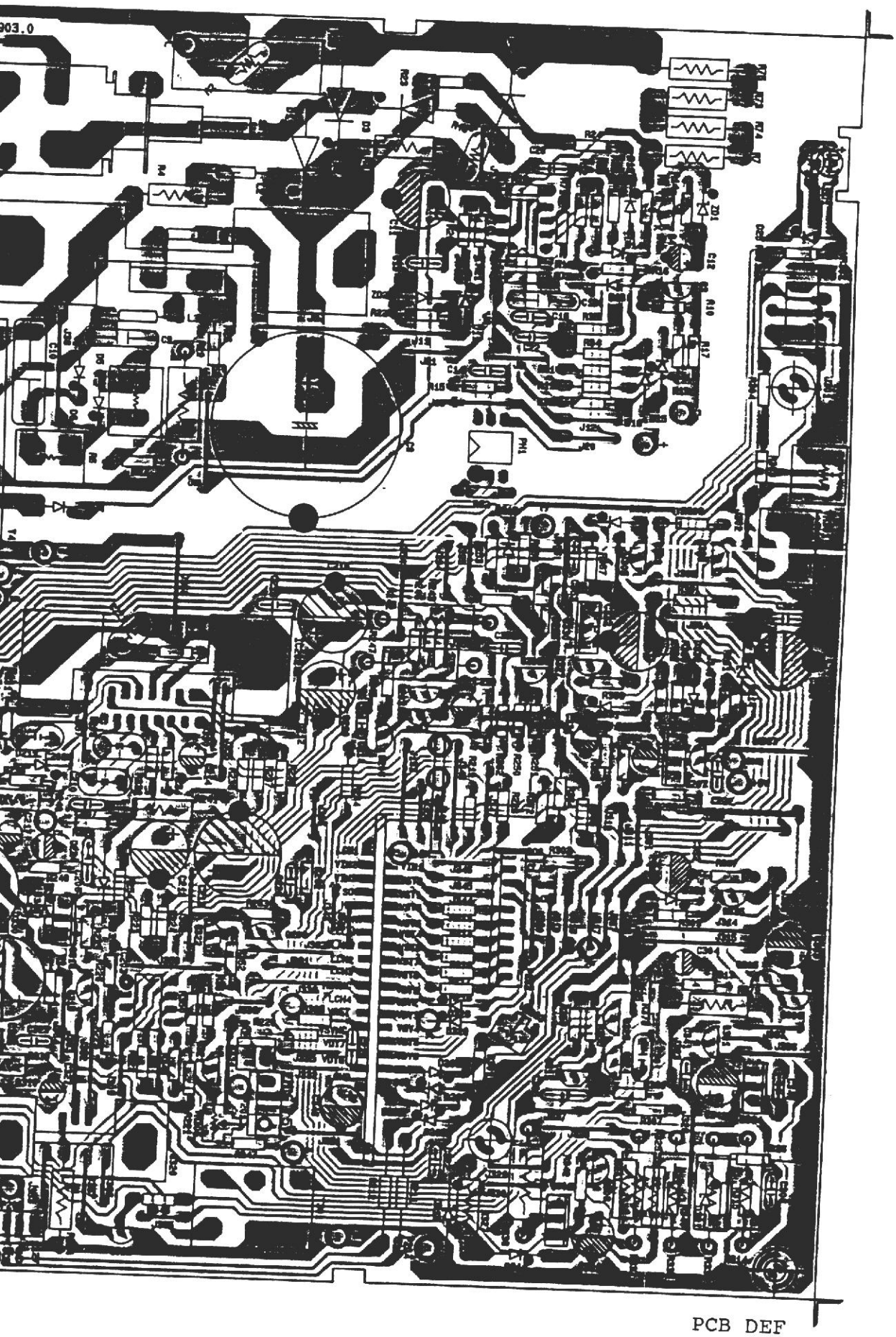


PCB DAUGTHER



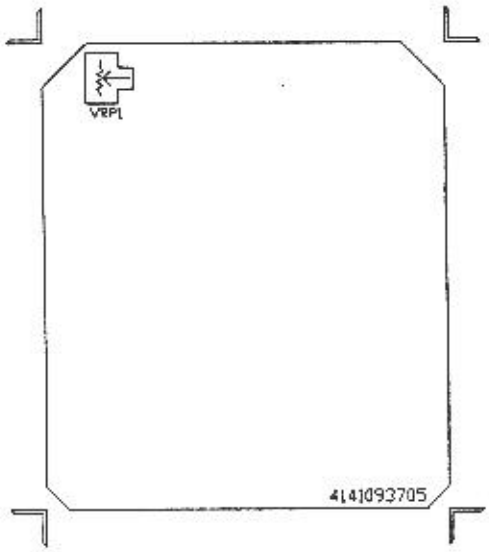
PCB DMC-1000


WARNING:
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD
REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE
MODEL 530
PART# 23903.0
J10
C309



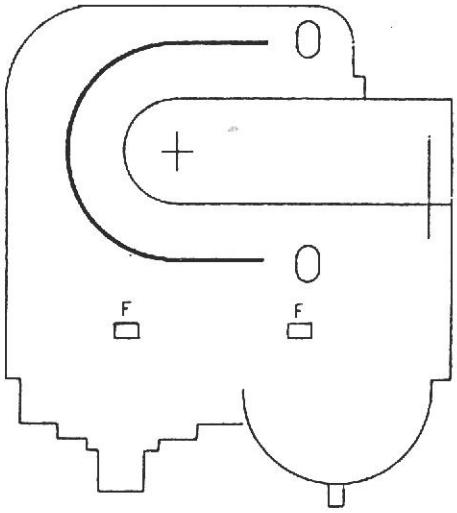
PCB DEF

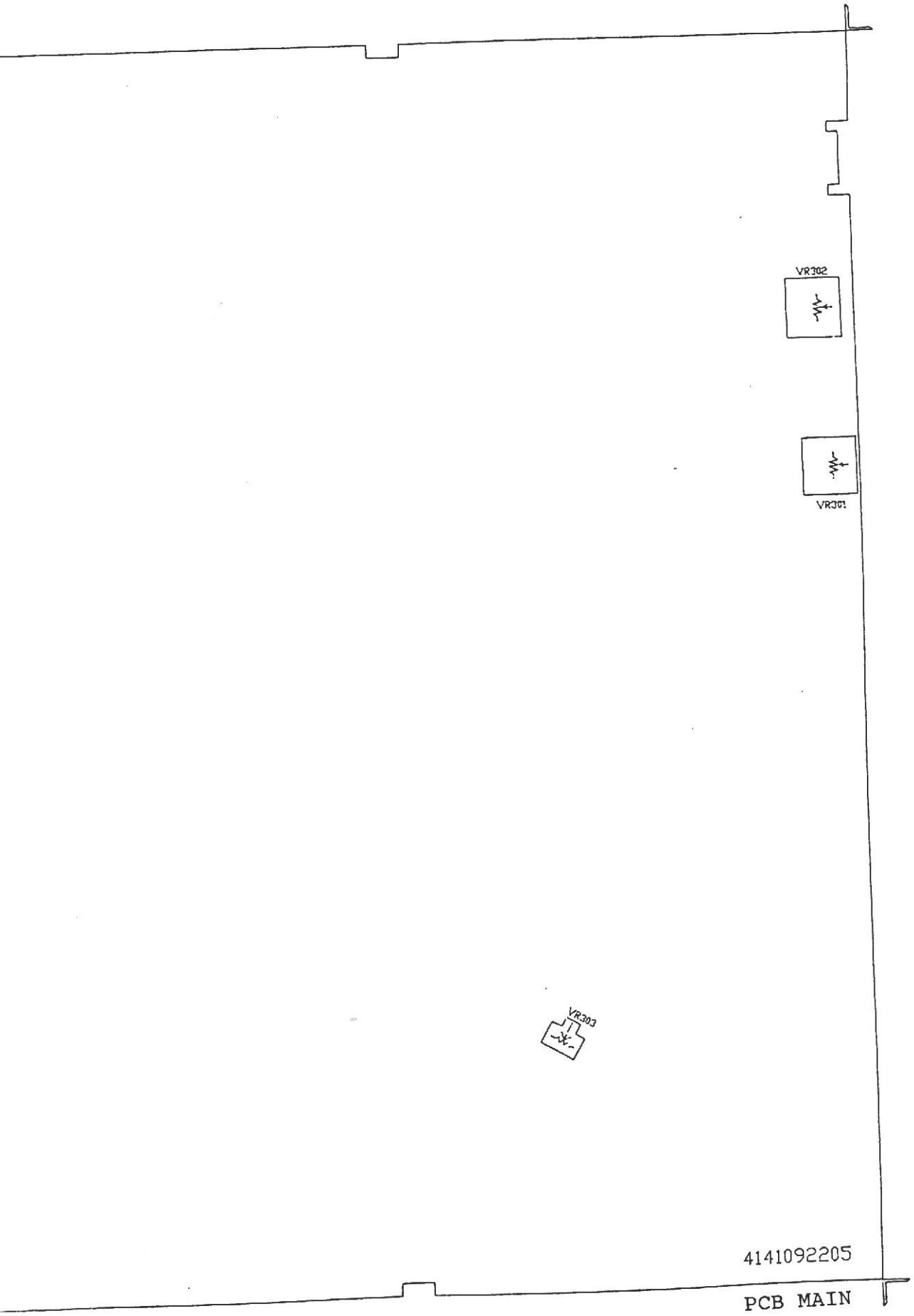
LOCATION OF ADJUSTING COMPONENTS



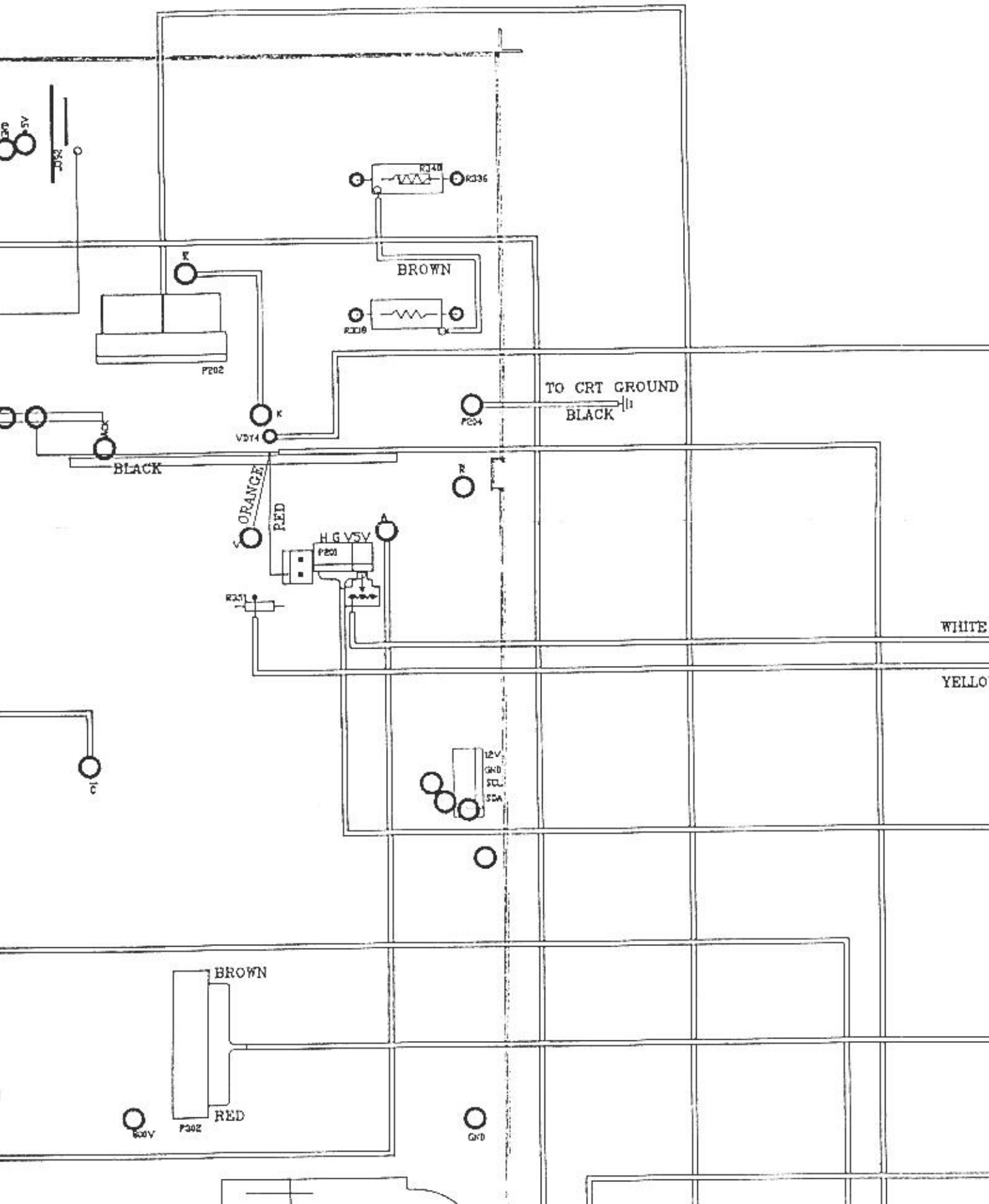
PCB DAUGHTER 56X64X1.6T

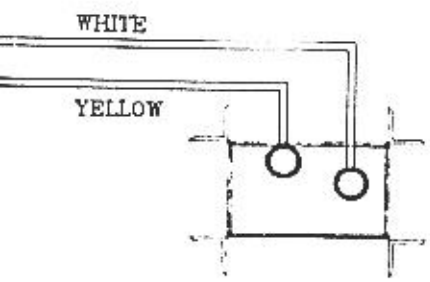
VR305
VR304

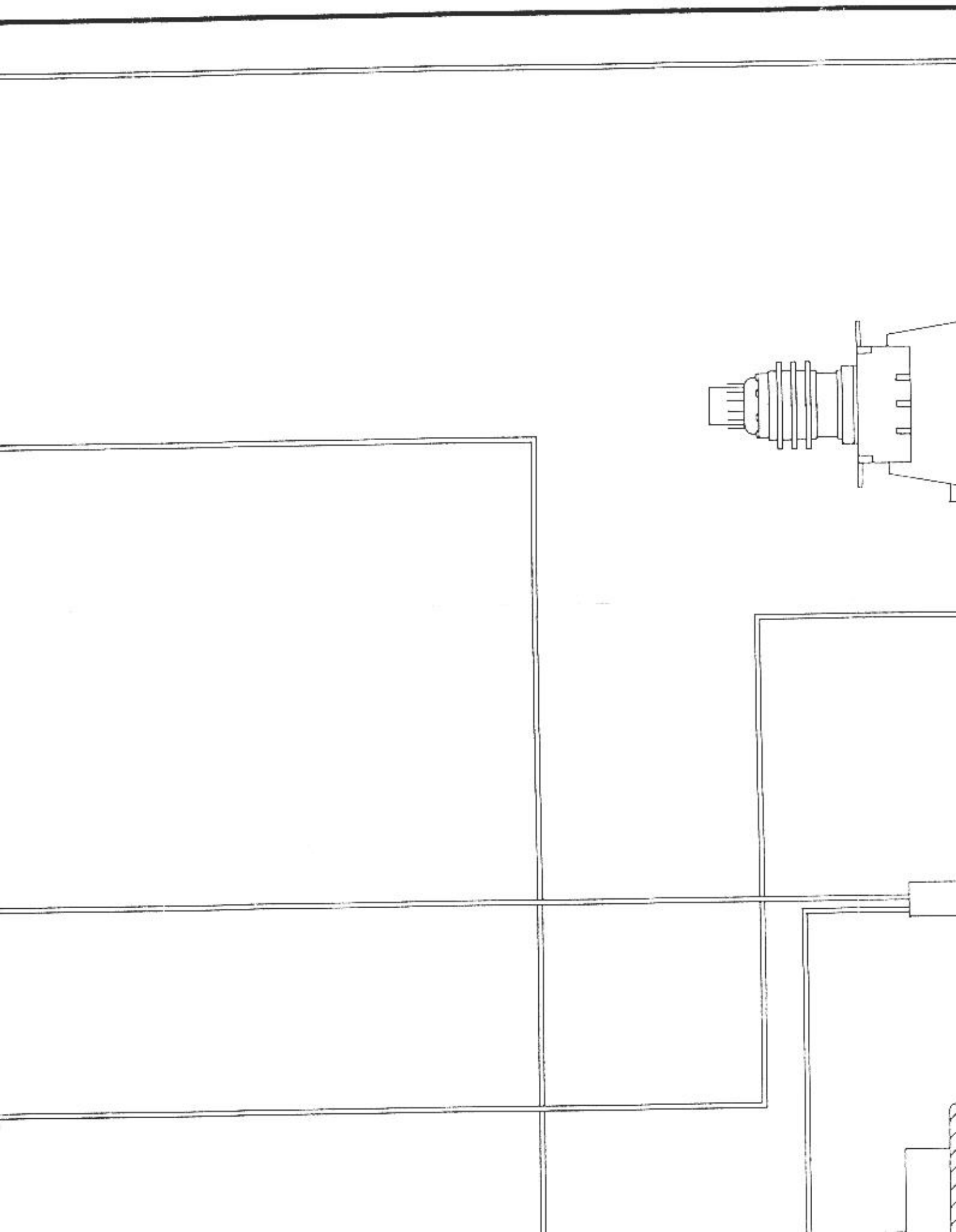

F
F

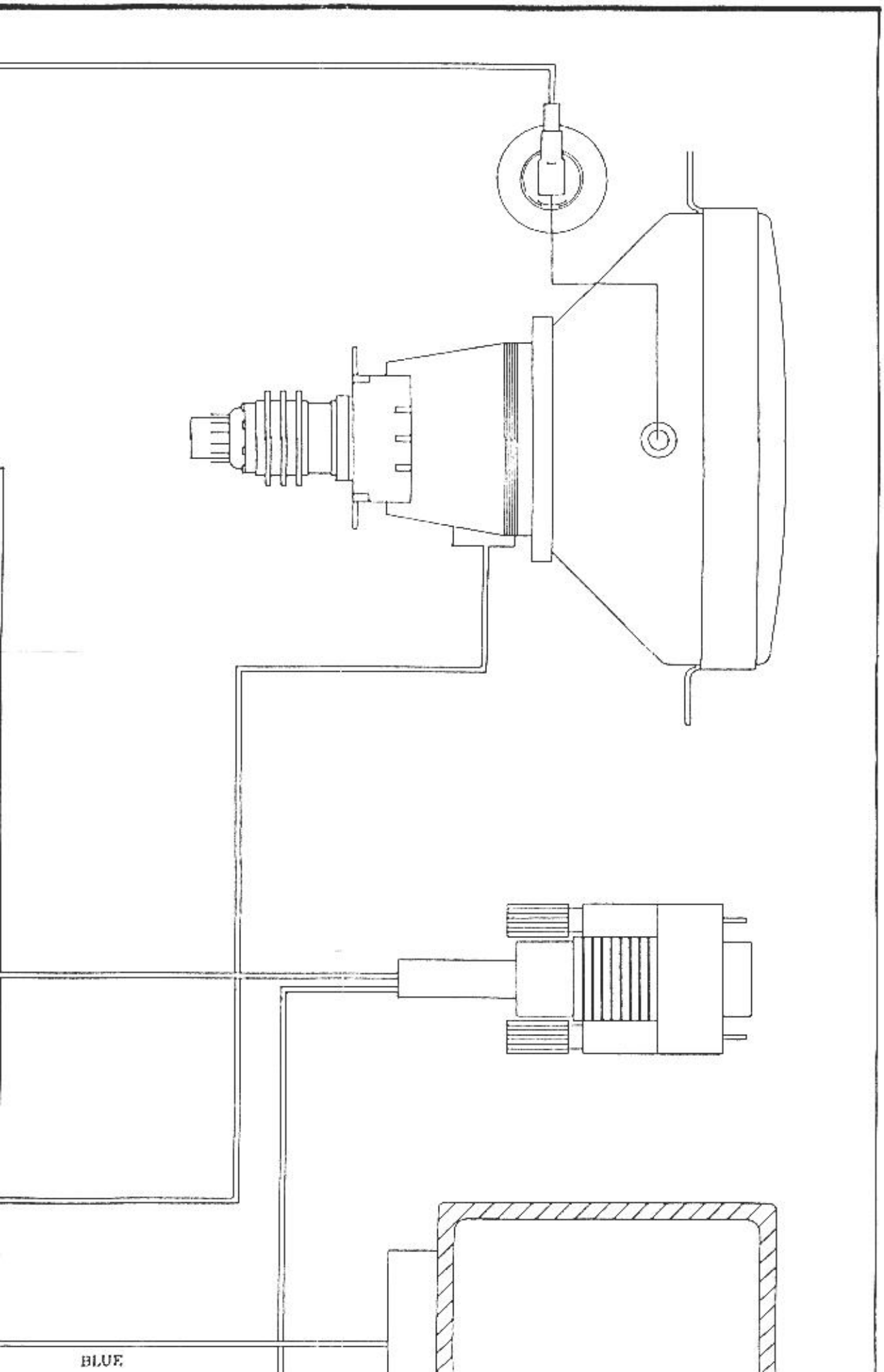

VR302
VR301
VR303
4141092205
PCB MAIN

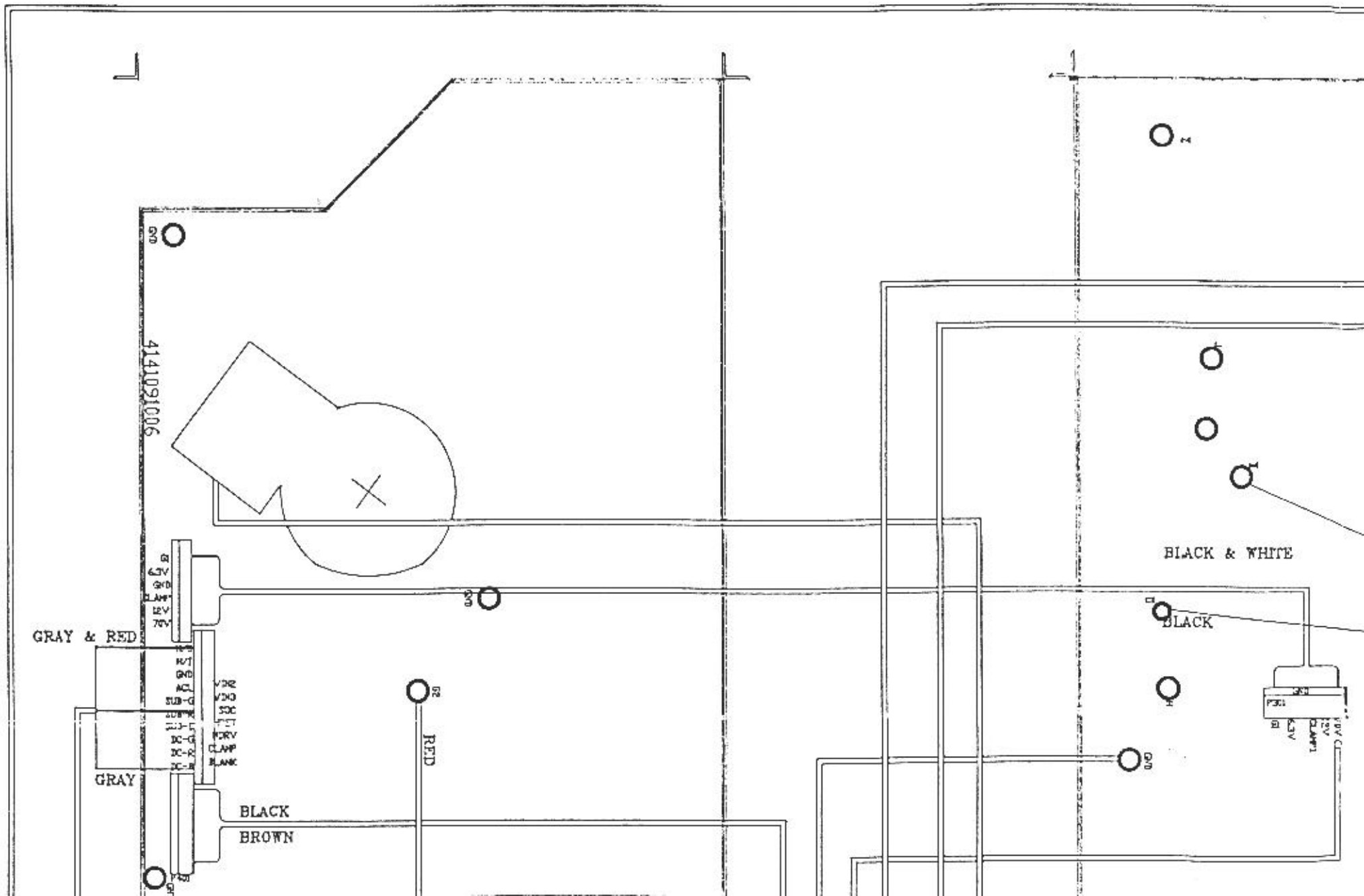
RED
RED
BROWN
BLUE
BROWN
GREEN
YELLOW
BROWN
WHITE
BLACK
ORANGE
BLUE
RED
BROWN
YELLOW
BLUE

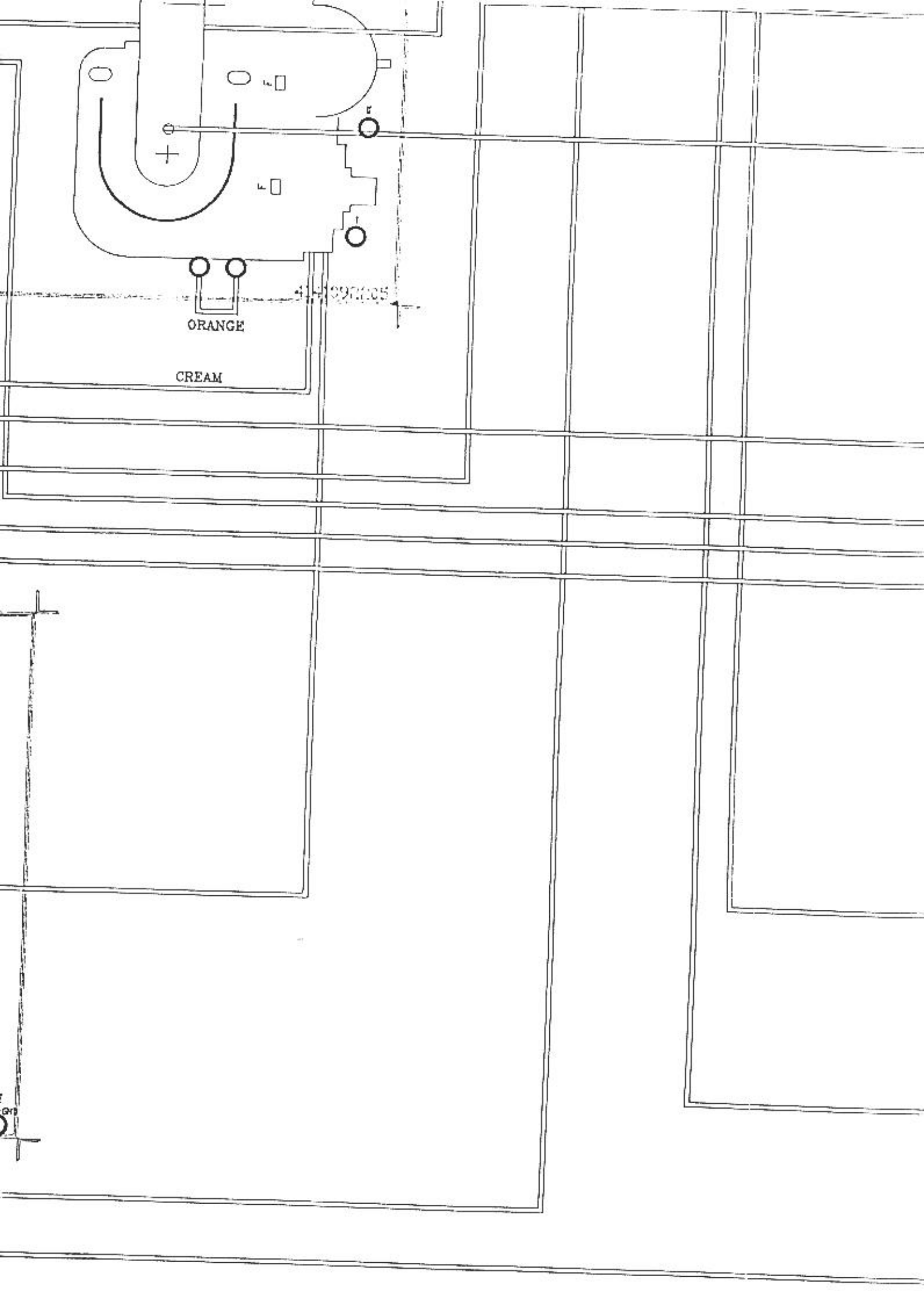

R340
R336
BROWN
R339
P202
TO CRT GROUND
BLACK
P204
K
VDY4
BLACK
ORANGE
RED
R
H.G V.SV
P201
R251
WHITE
YELLO
12V
GND
SCL
SDA
BROWN
RED
P202
GND

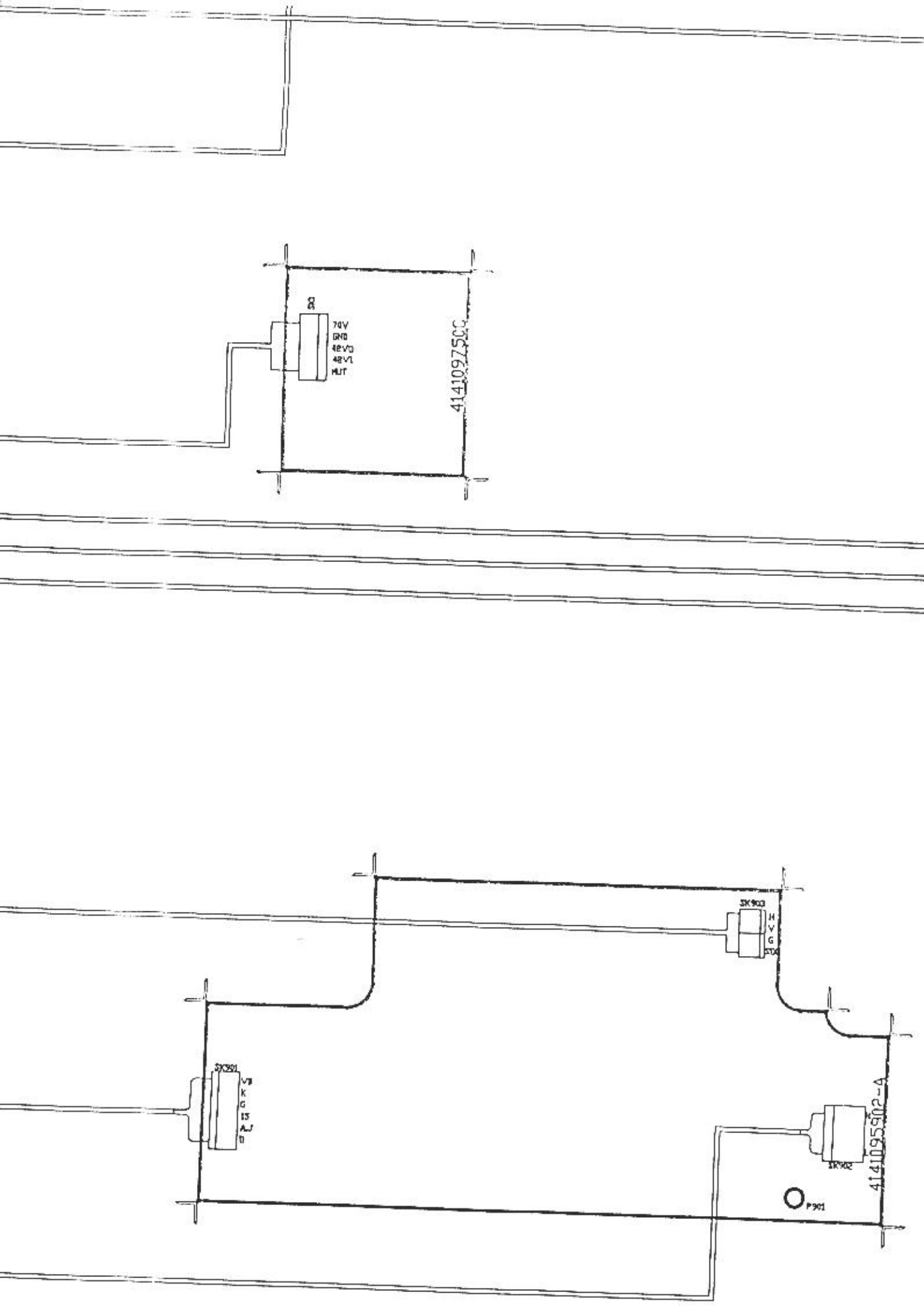

WHITE
YELLOW

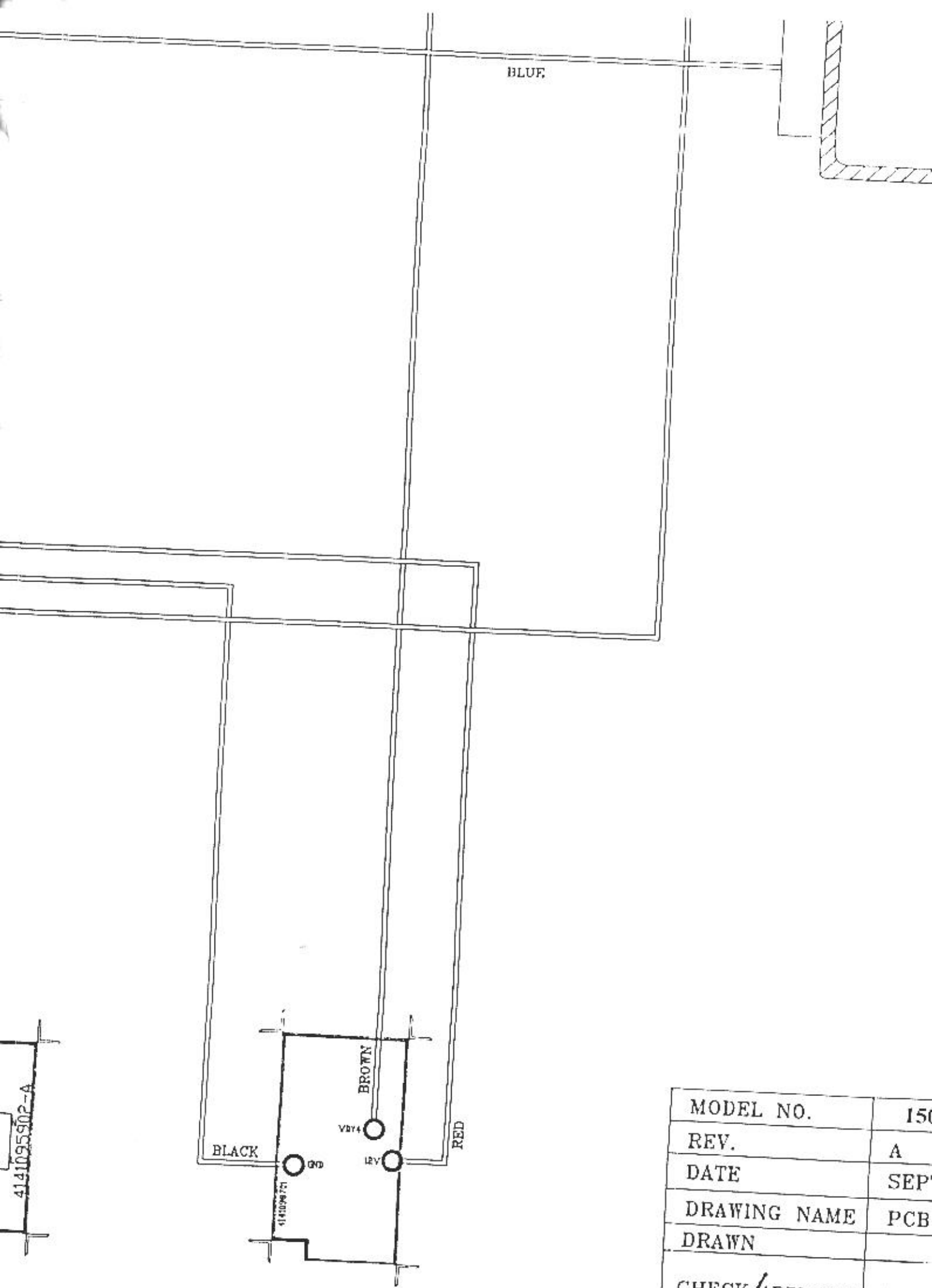



BLUE

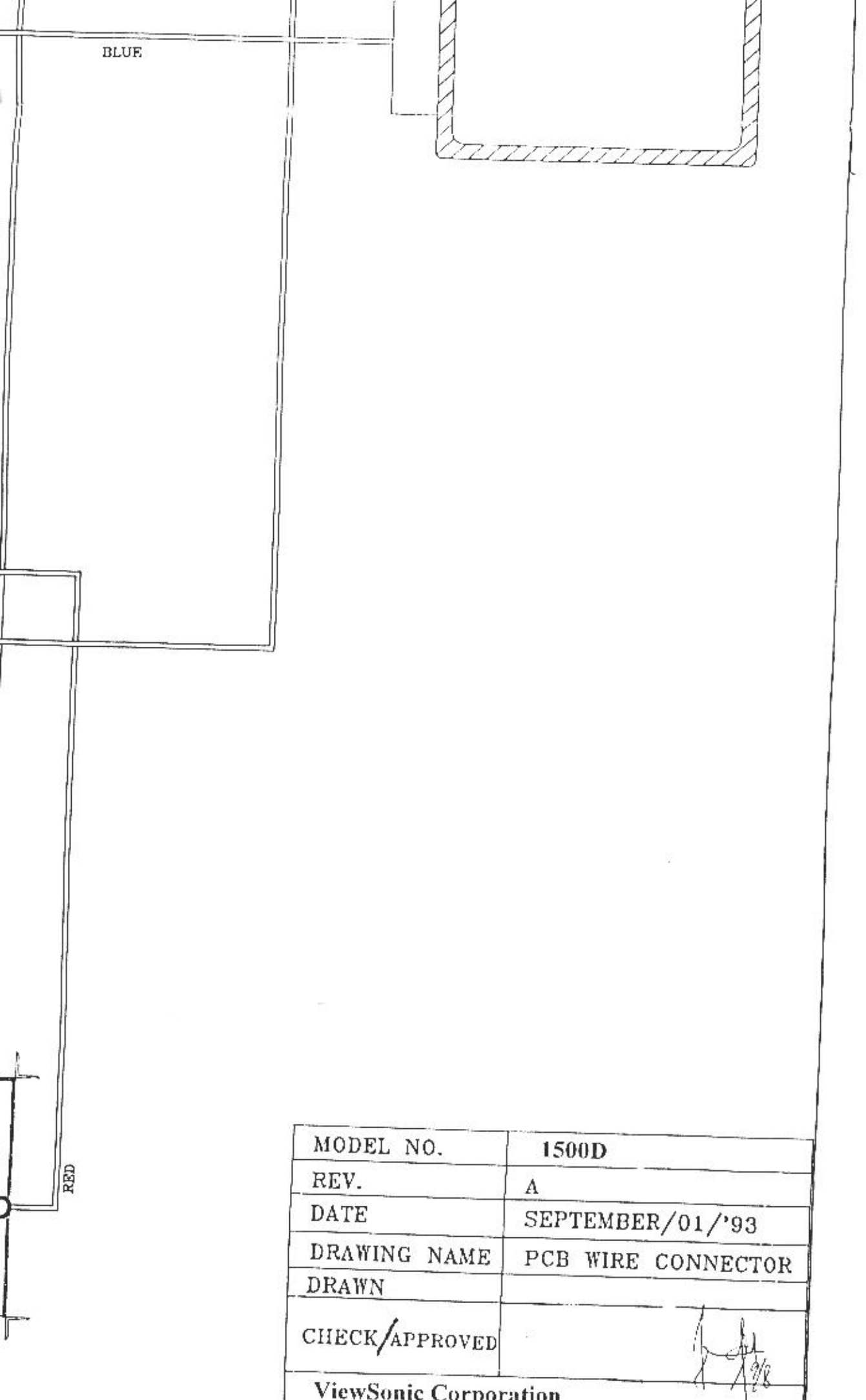

414091006
GRAY & RED
GRAY
BLACK
BROWN
RED
BLACK & WHITE
BLACK


ORANGE
CREAM


8
70V
GND
48VS3
48VS1
MUT
3K903
3K902
P901



MODEL NO.	150
REV.	A
DATE	SEP
DRAWING NAME	PCB
DRAWN	
CHECK/APPROVED	



MODEL NO.	1500D
REV.	A
DATE	SEPTEMBER/01/'93
DRAWING NAME	PCB WIRE CONNECTOR
DRAWN	
CHECK/APPROVED	
ViewSonic Corporation	

Replacement Parts List

AUGUST/23/'93

MECH

SPARE PART	PART NO.	INDEX	DESCRIPTION	ADDRESS
S	1011097490	1	#LENS	
	1018097490	2	#KNOB PUSH	
	8507145025	3	SCREW BIND M5X25 W/LOCK WASHER	
S	1001097492	4	#BEZEL	
S	7010016114	5	CRT M34KNZ280X08	
	8135115025	6	SCREW CAP HI-LOW TAPPING M5X25	
	3111502016	7	FLAT WASHER M5 T=1.6	
	3100452015	8	RUBBER WASHER 4.5¢X20¢X1.5T	
	C001137491	9	CRT BRAID WIRE ASS'Y	FOR CRT GND
	7020147490	10	COIL DEGAUSSING W/AL-MYLAR TAP	
	1017097490	11	#BRACKET (L)	
	1016097490	12	#BRACKET (R)	
	1019097490	13	#KNOB ROTARY	
S	SS74920130-404	14	PCB DMC-1000	
S	4570704350	15	AC SOCKET	
	1004096490	16	#PUSH BAR	
S	C710731010	17	I/O CABLE ASS'Y	
S	PM74900442-V	18	PCB DAUGHTER (56X64X1.6T)	
S	PM74925044-V	19	DEF PCB	
	2004097490	20	NECK SHIELD	
	9005094380	21	SPONGE	
	1008097490	22	#FASTENER	
S	1015097490	23	#BASE	
S	1010094310	24	FOOT	
S	1014097490	25	#BUCKET	
	8026144016	26	SCREW B/HD M4X16 TAPPING "P"	
S	PM7492054H-V	27	PCB DAUGHTER (148.5X72)	
S	SS73101630-403	28	PCB DAUGHTER-S (48.7X27)	
S	SS73101230-404	29	PCB VIDEO IC (65X48)	
	4410512001	30	MEMBRANCE SWITCH 520117 REV:B	
	2007097490	31	ANCHOR PLATE	
	1012097490	32	PAD	
	1020097490	33	#CAP	
	1010097490	34	#HOOK	
S	PM74920244-V	35	VIDEO PCB	
	3111453410	36	WASHER FLAT	
	1023094330	37	SPACERS RING	FOR FBT H.V HAT
S	SS73101430-404	38	PCB DAUGHTER	
S	SS73101530-404	39	PCB DAUGHTER (13.1X21.1)	
	8026113008	40	SCREW BID(+) ZINC M3X8 TAPPING	FOR ANCHOR PLATE & PWR SAVING PCB X2
	2009097490	41	BKT PCB "B"	
	3060040060	42	RIVET NYLON	
	C001111060	43	CABLE BRAID WIRE ASS'Y	
	8026114008	44	SCREW B/H "B" TITE M4X8	
	8128112608	45	SCREW B/H W/CAP "S" M2.6X8 TIT	FOR PCB BKT & Q1 H/S
	3011400040	46	NUT M4	
	8626113012	47	SCREW BIND(+) ZN3C M3X12 SELF	
	2002091229	48	CLIP CABLE	
	8121144012	49	SCREW CAP B/HEAD "C" TITE M4X1	
	8121144008	50	SCREW CAP "C" M4X8	

OTHERS

5541036140	CABLE TIE 3.6X140MM	
C459749030	GND WIRE ASS'Y 145MM	FOR NECK SHIELD TO REAR PANNEL
C459749020	GND WIRE ASS'Y 140MM	FOR NECK PCB TO NECK SHIELD
9012097492	MANUAL	
2001097492	LOGO	
5541036300	CABLE TIE 3.6X300MM.	
463310001N	AC POWER CORD WALL UL/CSA GRY	

DEF BOARD

SPARE PART	PART NO.	DESCRIPTION	ADDRESS
	1001094290	BUMPER	
	1003090000	NYLON BUSHING	FOR Q320
	2003097490	COVER FBT	
	2003197490	COVER FBT	
	2004294350	HEAT SINK	FOR IC202
	2007891030	HEAT SINK	FOR D306
	2007891030	HEAT SINK	FOR D304,305
	2009083080	PIN CONNECTOR	
	2009191740	HEAT SINK	FOR Q320
	3011100030	NUT ISO HEX M3 ZINC	FOR Q320
	3011100030	NUT ISO HEX M3 ZINC	FOR Q307
	3340100150	BEAD PIN 1X15MM	TP301
	3340230165	BEAD PIN 16.5X2.3ø	
	4010810252	RES-CHIP 1/8W +-5% 1KR	R809-816,818,832
	4010813352	RES-CHIP 1/8W +-5% 13KR	R817
	4010820352	RES-CHIP 1/8W +-5% 20KR	R801-808
	4010839252	RES-CHIP 1/8W +-5% 3.9KR	R819,820,830,831
	4050168055	RES-CFS 1/2 W +-5% 68 OHM AT	R318
	4050224155	RES-CF 1/2W +-5% 240R -AT-	R240
	4050224255	RES-CF 1/2W +-5% 2.4KR -AT-	R341
	4050247355	RES-CF 1/2W +-5% 47KR -AT-	R329
	4050400055	RES-CF 1/4W +-5% 0 R -AT-	R821,L801
	4050410055	RES-CF 1/4W +-5% 10R -AT-	R211,212
	4050410155	RES-CF 1/4W +-5% 100R -AT-	R262,385
	4050410255	RES-CF 1/4W +-5% 1KR -AT-	R244,249,251,253,306,362
	4050410355	RES-CF 1/4W +-5% 10KR -AT-	R3A3,3A4
	4050410355	RES-CF 1/4W +-5% 10KR -AT-	R301,378
	4050413255	RES-CF 1/4W +-5% 1.3KR -AT-	R355
	4050413355	RES-CF 1/4W +-5% 13KR -AT-	R366
	4050415155	RES-CF 1/4W +-5% 150R -AT-	R380
	4050415355	RES-CF 1/4W +-5% 15KR -AT-	R266,364,365
	4050418155	RES-CF 1/4W +-5% 180R -AT-	R238
	4050418255	RES-CF 1/4W +-5% 1.8KR -AT-	R3A2
	4050418255	RES-CF 1/4W +-5% 1.8KR -AT-	R245
	4050418355	RES-CF 1/4W +-5% 18KR -AT-	R278
	4050420255	RES-CF 1/4W +-5% 2KR -AT-	R248,303,304,313
	4050420355	RES-CF 1/4W +-5% 20KR -AT-	R363
	4050422255	RES-CF 1/4W +-5% 2.2KR -AT-	R237,309
	4050422255	RES-CF 1/4W +-5% 2.2KR -AT-	R371
	4050422455	RES-CF 1/4W +-5% 220KR -AT-	R370
S	4050422555	RES-CF 1/4W +-5% 2.2MR -AT-	R367
	4050424355	RES-CF 1/4W +-5% 24KR -AT-	R246
	4050427355	RES-CF 1/4W +-5% 27KR -AT-	R358
	4050430255	RES-CF 1/4W +-5% 3KR -AT-	R361
	4050430355	RES-CF 1/4W +-5% 30KR -AT-	R231
	4050433155	RES-CF 1/4W +-5% 330R -AT-	R228
	4050433255	RES-CF 1/4W +-5% 3.3KR -AT-	R302,372
	4050433955	RES-CF 1/4W +-5% 3.3R -AT-	R236
	4050436355	RES-CF 1/4W +-5% 36KR -AT-	R359
	4050439355	RES-CF 1/4W +-5% 39KR -AT-	R277
	4050443255	RES-CF 1/4W +-5% 4.3KR -AT-	R239
	4050447155	RES-CF 1/4W +-5% 470R -AT-	R261
	4050447255	RES-CF 1/4W +-5% 4.7KR -AT-	R3A6
	4050447255	RES-CF 1/4W +-5% 4.7KR -AT-	R213-218,229,252,340,387
	4050451255	RES-CF 1/4W +-5% 5.1KR -AT-	R360
	4050451355	RES-CF 1/4W +-5% 51KR -AT-	R3A5
	4050456255	RES-CF 1/4W +-5% 5.6KR -AT-	R230
	4050456355	RES-CF 1/4W +-5% 56KR -AT-	R368
	4050462255	RES-CF 1/4W +-5% 6.2KR -AT-	R250
	4050468255	RES-CF 1/4W +-5% 6.8KR -AT-	R369
	4050482255	RES-CF 1/4W +-5% 8.2KR -AT-	R243
	4050491365	RES-CF 1/4W +-2% 91KR -AT-	R232
	4071075855	RES-MF 1W +-5% 0.75R -AT-	R241
S	410001376A	TRS. 2SA1376A	Q330
S	4100111490	TRS. 2SB1149	Q331
S	4100226880	TRS. 2SC2688 TO-126	Q329
S	4100250030	TRS. 2SC5003 TO-3P	FOR Q307
S	410030600K	TRS. 2SD600KF TO-126	Q30
S	410030669A	TRS. 2SD669A TO-126	Q318
S	4100311380	TRS. 2SD1138 W/MOUNTING KIT TO	FOR Q320
S	4103200122	TRS. TIP 122	Q332
S	410584552B	TRS. BUK 455-200B TO-220	Q315

S	4110007330	TRS. 2SA733 TO-92M -RT-	Q207,305,327,333
S	411010647A	TRS. 2SB647A(C) -RT-	Q204,308,319
S	411020945P	TRS. KSC945CG TO-92 -RT-	Q206,306,335
S	411022655Y	TRS. 2SC2655-Y TO-92M -RT-	Q301
S	411030667A	TRS. 2S0667A TO-92M -RT-	Q203,205
S	4111122225	TRS. MMBT2222A SMD SOT-23	TR801
S	4116612030	TRS. RN1203	Q311,322,324,328
S	4120104002	DIODE 1N4002 -AT-	D212
S	4120141480	DIODE 1N4148 (SI) -AT-	D342-344
S	4120141480	DIODE 1N4148 (SI) -AT-	D205-208,213,215,327-332,338,340
S	4120141480	DIODE 1N4148 (SI) -AT-	
S	4120500152	DIODE ZENER 14.5-15.1V -AT-	D321,322
S	41205004A2	DIODE ZENER HZ4A2 -AT-	D211,214,312
S	41205009C1	DIODE ZENER HZ9C1 -AT-	D301
S	413010010A	DIODE RGP10A-5300 1A -A	D302
S	4130100100	DIODE RGP10D-5302 -AT- 1A	D311
S	413010010J	DIODE RGP10J-5390 1A 600V -AT-	D308,315
S	413020120C	DIODE EGP20C-5390 -AT-	D313,314
S	41303030F6	DIODE 30DF6	FOR D306
S	4130400480	DIODE MUR480 4A/800V -AT-	FOR D304,305
S	414108800I	#P.C.B. DMC-1000	
S	4141092205	#P.C.B. DEF (299x235.5)	
S	4141098600	#P.C.B. DAUGHTER-4 (13.1X21.1)	
S	4141098700	#P.C.B. DAUGHTER-5 (48.7X27) F	
S	4159100000	@IC DMC 1000 PLCC 68PIN	IC801
S	41591675A0	IC TDA1675A 15PIN	FOR IC202
S	4159173580	IC HA17358 8PIN	IC204
S	4159173580	IC HA17358 8PIN	IC203
S	4159241640	IC X24164 (SOIC) 8PIN	IC802
S	4159317001	IC LM317T W/MOUNTING KIT TO-22	IC201
	4159749070	FIRMWARE 7490ER7	
	4171018956	RES-MOF 1W +-5% 1.8R -AT-	R354
	4171030156	RES-MOF 1W +-5% 300R -AT-	R379
	4171033156	RES-MOF 1W +-5% 330R -AT-	R324
	4171033256	RES-MOF 1W +-5% 3.3KR -AT-	R327
S	4172010156	RES-MOF 2W +-5% 100R -AT-	R247
S	4172010956	RES-MOF 2W +-5% 1R -AT-	R316
S	4172022956	RES-MOF 2W +-5% 2.2R -AT-	R319
S	4172024156	RES-MOF 2W +-5% 240R -AT-	R314
S	4172033356	RES-MOF 2W +-5% 33KR -AT-	R349
S	4172068956	RES-MOF 2W +-5% 6.8R -AT-	R242
S	4172082056	RES-MOF 2W +-5% 82R -AT-	R337
S	4177339053	RES-MOFNS 3W +-5% 39 OHM SF	R335,336
S	4177368053	RES-MOF 3W +-5% 68R (SMALL) -S	R373
S	4256041001	RES-PR MF 1/4W +-1% 1KR -AT-	R221
S	4256041002	RES-PR MF 1/4W +-1% 10KR -AT-	R225
S	4256041132	RES-PR MF 1/4W +-1% 11.3KR -AT	R352
S	4256041302	RES-PR MF 1/4W +-1% 13KR -AT-	R226,315,326
S	4256041602	RES-PR MF 1/4W +-1% 16KR -AT-	R325
S	4256042001	RES-PR MF 1/4W +-1% 2KR -AT-	R222
S	4256042002	RES-PR MF 1/4W +-1% 20KR -AT-	R220
S	4256042201	RES-PR MF 1/4W +-1% 2.2KR -AT-	R312
S	4256042501	RES-PR MF 1/4W +-1% 2.5KR -AT-	R348
S	4256042742	RES-PR MF 1/4W +-1% 27.4KR -AT	R347
S	4256042801	RES-PR MF 1/4W +-1% 2.8KR -AT-	R259
S	4256043652	RES-PR MF 1/4W +-1% 36.5KR -AT	R224
S	4256044752	RES-PR MF 1/4W +-1% 47.5KR -AT	D203
S	4256044753	RES-PR MF 1/4W +-1% 475KR -AT-	R234
S	4256045622	RES-PR MF 1/4W +-1% 56.2KR -AT	R219,223
S	4256046191	RES-PR MF 1/4W +-1% 6.19KR -AT	R254
S	4256046340	RES-PR MF 1/4W +-1% 634R -AT-	R350
S	4256047502	RES-PR MF 1/4W +-1% 75KR -AT-	R235
S	4256048251	RES-PR MF 1/4W +-1% 8.25KR -AT	R346
S	4256049530	RES-PR MF 1/4W +-1% 953R -AT-	R258
	4321109006	COIL PEAKING 1.0UH -AT-	L803
	4321120006	XXXCOIL PEAKING 12UH	L307,308
	4323529003	CHOKE COIL 5.2UH	L302
	4325141003	COIL CHOKE 146UH -SF-	L304
	4490300120	CONN. 3P WAFER 2.5MM JS011-03M	P201
	4490400203	CONN. 4P HB02041 R/A	FOR H-CENTER PCB
	4490400207	CONN. 4P WAFER ROUND PIN	FOR YOKE P302
	4490401826	CONN. 4P R/A 171826-04	P203
	4491200220	CONN. 12P 52044-1210	CNP801
S	5021038417	VR 10KR W/O DETENT	VR301(EXT BRI.VR)
S	5021038417	VR 10KR W/O DETENT	VR302(EXT CONTRAST VR)
	5074104102	CAP-MP +-10% 0.1UF/250V -SF-	C225
	5074224101	CAP-MP +-10% 0.22UF/100V -SF-	C305

	5074335102	CAP-MP +-10% 3.3UF/250V -SF-	C334
	5090104515	CAP-PL +-5% 0.1UF/100V PITCH:5	C209,210
	5092682565	CAP-PP +-5% 0.0068UF/630V -SF-	C309
	5093562595	CAP-PP 099 P 2KV 5600PF +- 5%	C307
	5101471132	CAP-CC +-10% 470PF/1KV -RT-	C312
	5104103452	CAP-CC +80%-20% 0.01UF/50V -RT	C218
	5113154150	CAP-MC +-10% 0.15UF/50V -SF-	C211
	5113224150	CAP-MC +-10% 0.22UF/50V -SF-	C208
	5116103150	CAP-MC +-10% 0.01UF/50V -RT-	C358,359
	5116103150	CAP-MC +-10% 0.01UF/50V -RT-	C306,361
	5116104150	CAP-MC +-10% 0.1UF/50V -RT-	C206
	5116104150	CAP-MC +-10% 0.1UF/50V -RT-	C301,318,323,333
	5116563150	CAP-MC +-10% 0.056UF/50V -RT-	C207
	5128101552	CAP-CC +-5% 100PF/50V -RT-	C357
	5128101552	CAP-CC +-5% 100PF/50V -RT-	C229
	5128471552	CAP-CC +-5% 470PF/50V -RT-	C324
	5134104452	CAP-CC +80%-20% 0.1UF/50V SC45	C215,222,329,341
	5156100S03	CAP-EC +-20% 10UF/250V -SF-	C338
	5156101T16	CAP-EC +-20% 100UF/16V -RT-	C812
	5156101T16	CAP-EC +-20% 100UF/16V -RT-	C303,331,332
	5156101T25	CAP-EC +-20% 100UF/25V -RT-	C352
	5156109T50	CAP-EC +-20% 1UF/50V -RT-	C214,226,304,326
	5156222S25	CAP-EC +-20% 2200UF/25V -SF-	C213
	5156229T50	CAP-EC +-20% 2.2UF/50V -RT-	C217,224,339
	5156229T50	CAP-EC +-20% 2.2UF/50V -RT-	C360
	5156470T35	CAP-EC +-20% 47UF/35V -RT-	C219
	5156470T50	CAP-EC +-20% 47UF/50V -RT-	C337
	5156471S16	CAP-EC +-20% 470UF/16V -SF-	C212
	5156471S25	CAP-EC +-20% 470UF/25V -SF-	C330
	515E221S35	CAP-EC-M 35V 220UF +-20% 2000	C345
	515X101T50	@CAP-EC-M 5.5V 100UF +-20% 100	C321,342
	515X102S25	@CAP-EC-M 25V 1000UF +-20% 100	C335,336
	515X102S35	@CAP-EC-M 35V 1000UF +-20% 100	C216
	515X221S35	CAP-EC-M 35V 220UF +-20% 1000	C220
	5169689S50	CAP-NPEC +-20% 6.8UF/50V -SF-	C325
	5175105T16	CAP-TAN +-20% 1UF/16V CHIP(321	C801
	5190105583	CAP-MPP +-5% 1.0UF/250V	C314
	5190564543	CAP-MPP +-5% 0.56UF/400V -SF-	C313
	5225125410	POT(CERMET) 0.3W 250KR 6¢ LAY-	VR305
	5228110410	POT(CARBON) 0.1W 100KR 6¢ LAY-	VR304
	5228110380	POT(CARBON) 0.1W 10KR 6¢ STAND	VR303
	5322234514	WIRE UL1015 #22 ORG 440-TERM 1	FOR V-V'
	5324100600	WIRE UL1007 #24 BLK 50-K-K	FOR GND
	5324110800	WIRE UL1007 #24 BRN 70-K-K	WIRE S-S'
	5324111500	WIRE UL1007 #24 BRN 140-K-K	C-C'
	5324113200	WIRE UL1007 #24 BRN 310-K-K	FOR VDY4
	5324121800	WIRE UL1007 #24 RED 170-K-K	FOR B+
	5324140600	WIRE 1007 #24 YEL 50-K-K	
	5324190700	WIRE 1007 #24 WHT 65-K-K	
	5324260301	WIRE UL1007 #24 BLU 20-5-5	
	5406100000-000	JUMP WIRE 0.6¢	J153,301-307,309,311-315,317-323,325-330,333,334
	5406100000-000	JUMP WIRE 0.6¢	J337-340,342-359,361-371,373-378,380-398,R233,C308
	5406100000-000	JUMP WIRE 0.6¢	,C340
	5406100000-000	JUMP WIRE 0.6¢	R3A1,VR308
	5520100004	INSULATOR SI-RUBBER TO-220 (W/	FOR Q320
	7050204490	DRIVE TRANSFORMER	T301
S	7050304610	F.B.T.	T302
	7085207490	COIL LINEARITY	L303
	7145102256	CAP-CC +-20% 0.001UF/50V CHIP1	C809
	7145473156	CAP-CC +-10% 0.047UF/50V CHIP	C804
	7147104456	CAP-CC +80%-20% 0.1UF/50V CHIP	C803,805-807
	7154000000	CRYSTAL 4.00MHZ	RC801
	7185560156	CAP-CC +-10% 56PF/50V CHIP1206	C810,811
	8026113008	SCREW BID(+) ZINC M3X8 TAPPING	FOR IC202
	8504113010	SCREW BIND(+) M3X10 MACH W/DIS	FOR Q307
	8504113010	SCREW BIND(+) M3X10 MACH W/DIS	FOR Q320
	9008092270	LABEL EPROM	
	9022294000	LABEL WARNING 27KV	
	C432033900	COIL CHOKE 3.3MH	L305
	C432303002	CHOKE COIL 5.2UH	L302
	C488100006	CONN. 10P & 6P WIRE ASS'Y	P202 TO P402,P301 TO P403
S	SS73101630-403	H-CENTER DAUGHTER-5 PCB ASS'Y	
S	SS73101630-403	H-CENTER DAUGHTER-5 PCB ASS'Y	

SPS BOARD

SPARE PART	PART NO.	DESCRIPTION	ADDRESS
	1003090000	NYLON BUSHING	FOR Q11
	2004191630	HEAT SINK HOLDER	FOR D1
	2004191810	HEAT SINK	FOR Q6
	2007097490	ANCHOR PLATE	
	2007891030	HEAT SINK	FOR Q11
	2008094660	HEAT SINK	FOR Q1
	2008283080	HEAT SINK	FOR D18
	3011100030	NUT ISO HEX M3 ZINC	FOR Q11
	3011200030	NUT M3 NI	FOR Q6
	3027140030	WASHER GEAR 3¢ INSIDE GEAR ZN3	FOR Q6
	3052000300	EYELET	FOR T4
	3053070300	EYELET 3.07¢X3.0X5.08¢	FOR Q1,6
	3053070714	EYELET 3.07¢X7.14X5.08¢	
	3211300000	WASHER SPRING M3 5.2¢X3.2¢X0.8	FOR Q11
	4050247055	RES-CF 1/2W +-5% 47R -AT-	R52
	4050410055	RES-CF 1/4W +-5% 10R -AT-	R20
	4050410155	RES-CF 1/4W +-5% 100R -AT-	RP11
	4050410155	RES-CF 1/4W +-5% 100R -AT-	R14
	4050410255	RES-CF 1/4W +-5% 1KR -AT-	R16,25,63,89
	4050410255	RES-CF 1/4W +-5% 1KR -AT-	R93
	4050410255	RES-CF 1/4W +-5% 1KR -AT-	RP7,13,18,22,23
	4050410355	RES-CF 1/4W +-5% 10KR -AT-	R90,91
	4050410355	RES-CF 1/4W +-5% 10KR -AT-	RP19,20
	4050410355	RES-CF 1/4W +-5% 10KR -AT-	R11
S	4050410555	RES-CF 1/4W +-5% 1MR -AT-	RP8
S	4050410555	RES-CF 1/4W +-5% 1MR -AT-	R23,24
	4050410955	RES-CF 1/4W +-5% 1R -AT-	R28
	4050412355	RES-CF 1/4W +-5% 12KR -AT-	R17
	4050415155	RES-CF 1/4W +-5% 150R -AT-	RP9
	4050415355	RES-CF 1/4W +-5% 15KR -AT-	R13
	4050415455	RES-CF 1/4W +-5% 150KR -AT-	R67
	4050420155	RES-CF 1/4W +-5% 200R -AT-	R8
	4050420355	RES-CF 1/4W +-5% 20KR -AT-	RP1,25
	4050420455	RES-CF 1/4W +-5% 200KR -AT-	R67
	4050422155	RES-CF 1/4W +-5% 220R -AT-	R21
	4050422255	RES-CF 1/4W +-5% 2.2KR -AT-	RP12,15
	4050424055	RES-CF 1/4W +-5% 24R -AT-	R55
	4050427155	RES-CF 1/4W +-5% 270R -AT-	R62
	4050427255	RES-CF 1/4W +-5% 2.7KR -AT-	RP21
	4050427455	RES-CF 1/4W +-5% 270KR -AT-	R67
	4050430355	RES-CF 1/4W +-5% 30KR -AT-	R92
	4050433055	RES-CF 1/4W +-5% 33R -AT-	R18,27
	4050439055	RES-CF 1/4W +-5% 39R -AT-	R26
	4050439355	RES-CF 1/4W +-5% 39KR -AT-	R10
	4050447055	RES-CF 1/4W +-5% 47R -AT-	R31
	4050447155	RES-CF 1/4W +-5% 470R -AT-	R64
	4050447255	RES-CF 1/4W +-5% 4.7KR -AT-	RP17,24
	4050447355	RES-CF 1/4W +-5% 47KR -AT-	RP16
	4050451255	RES-CF 1/4W +-5% 5.1KR -AT-	R12,22,34,35,54
S	4050456555	RES-CF 1/4W +-5% 5.6MR -AT-	R15
	4050468255	RES-CF 1/4W +-5% 6.8KR -AT-	RP14
	4050475155	RES-CF 1/4W +-5% 750R -AT-	R32
	4050475255	RES-CF 1/4W +-5% 7.5KR -AT-	R69
	4071033855	RES-MF 1W +-5% 0.33R -AT-	R4
	4071039855	RES-MF 1W +-5% 0.39R -AT-	R51
S	4072047855	RES-MF 2W +-5% 0.47R -AT-	R29
S	4095010351	RES-WW 5W +-5% 10K (SQR) -SF-	R6
S	4095022151	RES-WW 5W +-5% 220R -SF-	R5,70
S	4095043058	POWER RES-WW 5W +-5% 43R	R39
S	4101511010	TRS. MOSFET 2SK1101 SC-67	FOR Q6
S	4101515070	TRS. MOSFET 2SK1507 TO-220	FOR Q1
S	4105905300	#TRS. IRF530 TO-220	Q15
S	4110007330	TRS. 2SA733 TO-92M -RT-	QP1,5
S	4110105610	TRS. 2SB561 TO-92 -RT-	Q3
S	4110105610	TRS. 2SB561 TO-92 -RT-	QP3
S	411021515K	TRS. 2SC1515K TO-92 -RT-	Q16
S	411022120Y	TRS. 2SC2120Y TO-92 -RT-	QP4
S	4110304670	TRS. 2SD467 TO-92 -RT-	QP2
S	4114510068	TRS. LSCR100-6B TO-92 -RT-	Q4
S	4120146060	DIODE 1N4606 (SI) -AT-	D11-16,21
S	4120146060	DIODE 1N4606 (SI) -AT-	D33
S	4120146060	DIODE 1N4606 (SI) -AT-	DP1,2

S	4120500162	DIODE ZENER 16V HZ-16-2 -AT-	ZD5
S	4120501802	DIODE ZENER HZ18-2 V -AT-	ZD2
S	4120502402	DIODE ZENER 1/2W 24V HZ24-2 -A	ZD1
S	4120552818	#DIODE ZENER 1N5281B	ZP1
S	4120624630	LED G/O BI-COLOR LT2463-23	LED1
S	4130101100	DIODE EGP10D	D7
S	413010426C	DIODE BYV26C KINK FORMING -AT-	D5,6,17
S	413020426C	DIODE 2.3A/600V BYM26C -AT-	D22
S	4130252508	DIODE 2508 -AT-	D1-4
S	41303030F1	DIODE 30DF1	D23
S	41303030F2	DIODE 30DF2	D19,20
S	41303031F4	DIODE 3A/400V 35NS 31DF4 -AT-	FOR D18
S	4141093705	P.C.B. DAUGHTER 56X64X1.6T	
S	4141097500	P.C.B DAUGHTER-3 (40X40)	
S	4141098300	#P.C.B DAUGHTER-1 (64X56)	
S	4159317001	IC LM317T W/MOUNTING KIT TO-22	FOR Q11
S	4159353000	IC LF353N 8PIN	ICP2
S	4159384200	IC UC3842A 8PIN	IC1
S	4159393000	IC LM 393 14PIN	ICP3
S	415943100A	IC TL431 REGULATOR TO-92 -RT-	IC3
	4159435002	POTO COUPLER X'STER 4N35 W=10	PH1
S	415978L05A	IC MC78L05ACZ 3PIN	ICP1
	4171015358	RES-MOF 1W +-5% 15KR	R60
	4171033456	RES-MOF 1W +-5% 330KR -AT-	R1
	4171039256	RES-MOF 1W +-5% 3.9KR -AT-	R7,73-75
	4171047456	RES-MOF 1W +-5% 470KR -AT-	R3
S	4256041001	RES-PR MF 1/4W +-1% 1KR -AT-	RP5
S	4256041101	RES-PR MF 1/4W +-1% 1.1KR -AT-	PR10
S	4256042201	RES-PR MF 1/4W +-1% 2.2KR -AT-	RP6
S	4256042402	RES-PR MF 1/4W +-1% 24KR -AT-	R65
S	4256042701	RES-PR MF 1/4W +-1% 2.7KR -AT-	R66
S	4256046492	RES-PR MF 1/4W +-1% 64.9KR -AT	RP3
S	4256048201	RES-PR MF 1/4W +-1% 8.2KR -AT-	R19
S	4256049101	RES-PR MF 1/4W +-1% 9.1KR -AT-	PR9
	4322309006	COIL FERRITE 1 PASS -AT-	L4
	4322309006	COIL FERRITE 1 PASS -AT-	L1-3,7
	4323112003	POWER CHOKE 1.1MH	L6
	4323529003	CHOKE COIL 5.2UH	L5
	4410204004	SWITCH POWER SDOS32B7U-CK	SW1
	4490200207	CONN. 2P WAFER ROUND PIN 10MM	SK3
	4490500130	CONN. 5P WAFER 2.5MM	SK1
	4491500203	CONN. 15P HB02151 R/A	SKP1
S	4570704350	AC SOCKET	SK1
S	4692300001	CLIP-FUSE 5MM	FOR F1
	5061102440	CAP-CCS +-20% 1000PF/400V -SF-	C62
	5061472440	CAP-CCS +-20% 4700PF/400V -SF-	C3,6,7,62
	5061472440	CAP-CCS +-20% 4700PF/400V -SF-	C3,6,7
	5067224425	CAP-MPR +-20% 0.22UF/250V (PA	C1,5
	5074103101	CAP-MP +-10% 0.01UF/100V -SF-	C18
	5074104102	CAP-MP +-10% 0.1UF/250V -SF-	CP1
	5074224101	CAP-MP +-10% 0.22UF/100V -SF-	C54
	5101331132	CAP-CC +-10% 330PF/1KV -RT-	C30,33
	5101471193	CAP-CC +-10% 470PF/3KV -SF-	C9
	5116102550	CAP-MC +-5% 0.001UF/50V -RT-PE	C14
	5116102550	CAP-MC +-5% 0.001UF/50V -RT-PE	CP4,13,14
	5116104150	CAP-MC +-10% 0.1UF/50V -RT-	C53
	5116104150	CAP-MC +-10% 0.1UF/50V -RT-	C92
	5116104550	CAP-MC +-5% 0.1UF/50V -RT-	CP7
	5116152550	CAP-MC +-5% 0.0015UF/50V -RT-	CP3
	5116222550	CAP-MC +-5% 0.0022UF/50V -RT-	CP9
	5116472150	CAP-MC +-10% 0.0047UF/50V -RT-	C16
	5116682550	CAP-MC +-5% 0.0068UF/50V -RT-	CP8
	5128331552	CAP-CC +-5% 330PF/50V -RT-	C52
	5128471552	CAP-CC +-5% 470PF/50V -RT-	C20
	5128561552	CAP-CC +-5% 560PF/50V -RT-	CP10
	5134104402	CAP-CC +80%-20% 0.1UF/25V -RT-	CP11
	5134104402	CAP-CC +80%-20% 0.1UF/25V -RT-	C13,22
	5156100T50	CAP-EC +-20% 10UF/50V -RT-	CP6,12
	5156101T25	CAP-EC +-20% 100UF/25V -RT-	C12
	5156220T25	CAP-EC +-20% 22UF/25V -RT-	CP15
	5156221T25	CAP-EC +-20% 220UF/25V -RT-	C48
	5156331S35	CAP-EC-M 35V 330UF +-20% 2000	C11
	5156331T25	CAP-EC +-20% 330UF/25V -RT-	C11
	515A101S03	CAP-EC +-20% 100UF/250V -SF-	C31
	515A101S07	CAP-EC +-20% 100UF/200V -SF-	C31
	515F101S01	CAP-EC +-20% 100UF/100V -SF-	C27
	515F221S01	CAP-EC +-20% 220UF/100V -SF-	C29

	515F221S50	CAP-EC +-20% 220UF/50V -SF-	C45
	515F471S25	CAP-EC +-20% 470UF/25V -SF-	C46,47
	515L221S04	CAP-EC +-20% 220UF/400V -SF-	C8
	515X470S01	CAP-EC-M 100V 47UF +-20% 1000	C91
	5190104143	CAP-MPP +-10% 0.1UF/400V -SF-	C10
	5221110300	POT(CERMET) 0.3W 10KR 6¢ STAND	VRP1
S	5266300060	FUSE 3A/250V	F1
	5322162400	WIRE 1007 #22 BLU 230-K-K	A-A'
	5406100000-000	JUMP WIRE 0.6¢	D24,L11,12
	5520100004	INSULATOR S1-RUBBER TO-220 (W/	FOR Q11
	7021134091	PTCR PTH451C262BF140M270	PTCR1
	7050107490	POWER X'FORMER	T4
	7064370112	COMMON MOD CHOKE ASS'Y 1.1MH	T2
	7066490353	#COMMON MODE TRF ASS'Y	T1
	7103040037	THMER. +-15% 40R W/KINK	R2
	8026113008	SCREW BID(+) ZINC M3X8 TAPPING	FOR ANCHOR PLATE & MAIN PCB
	8026113012	SCREW BIND(+) ZN3C M3X12 SELF	FOR ANCHOR PLATE & AC SOCKET
	8128114008	SCREW CAP TAPPING M4X8"B"	FOR L9
	8283113015	SCREW BIND(+) M3X15 MACH W/SPR	FOR Q1
	8283143012	SCREW WITH SP WASHER M3X12	FOR Q6
	8504113D10	SCREW BIND(+) M3X10 MACH W/DIS	FOR Q11
	C459460020	GND WIRE ASS'Y	L9
	C459749010	GND WIRE ASS'Y	L9
	C488030181	CONN. 3P & WIRE ASS'Y UL1617	FOR SK902
	C488040063	CONN. 4P & WIRE ASS'Y	FOR SK903
	C488050067	@CONN. & WIRE ASS'Y	FM MAIN TO SK1
	C488060033	CONN. 6P & WIRE ASS'Y	FOR SK901

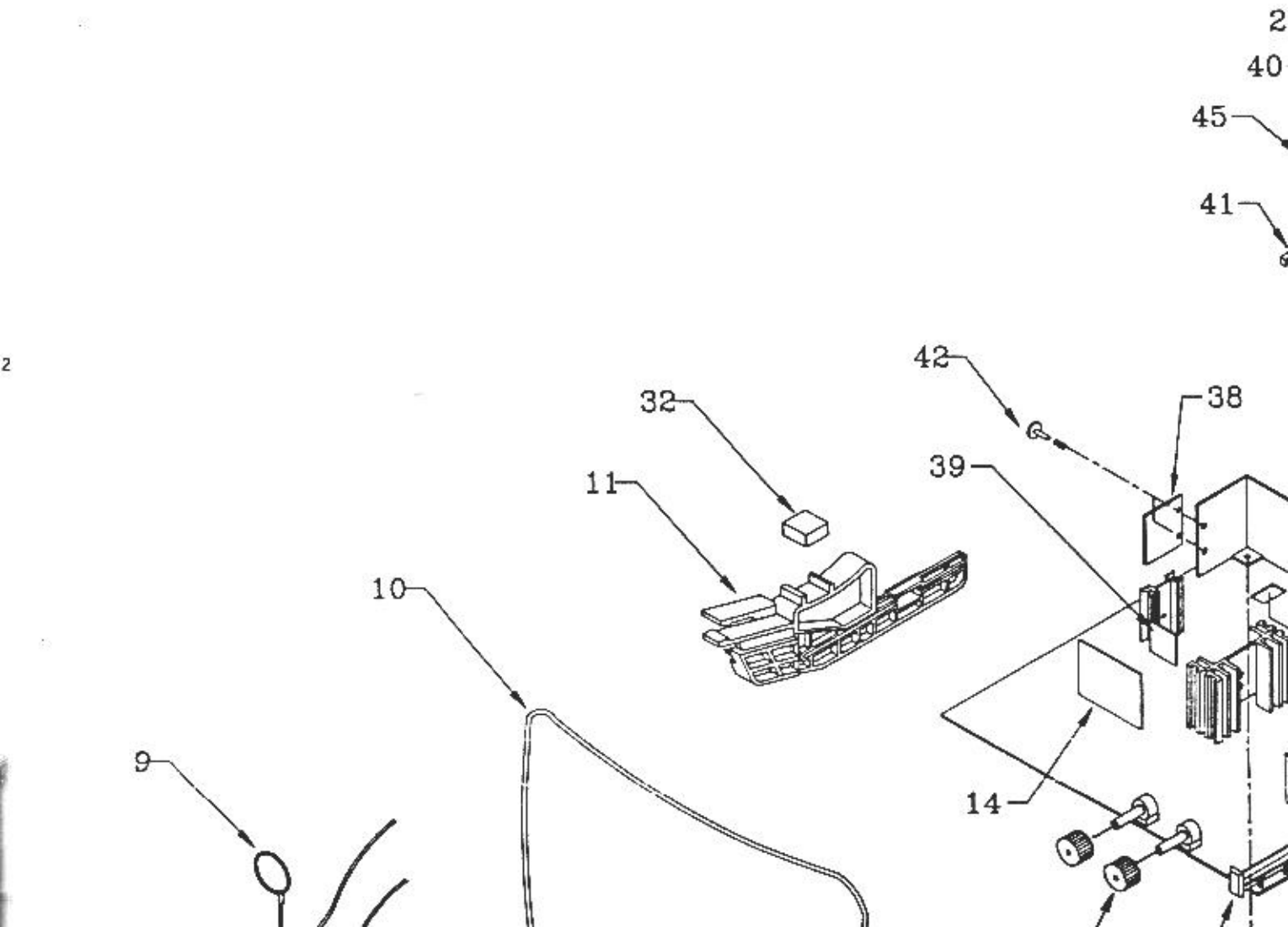
NECK BOARD

PART NO.	DESCRIPTION	ADDRESS
2004294150	HEAT SINK	FOR Q401,421,441
3340230165	BEAD PIN 16.5X2.3¢	
4010800052	RES-CHIP 1/8W +-5% 0R	FOR JD1,2
4010810052	RES-CHIP 1/8W +-5% 10R	RE5
4010810352	RES-CHIP 1/8W +-5% 10KR	RD1
4010812252	RES-CHIP 1/8W +-5% 1.2KR	RD4
4010839152	RES-CHIP 1/8W +-5% 390R	RA3,RB3,RC3
4010839252	RES-CHIP 1/8W +-5% 3.9KR	RD7
4010856152	RES-CHIP 1/8W +-5% 560R	RE2
4010875052	RES-CHIP 1/8W +-5% 75R	RA1,RB1,RC1
4010882252	RES-CHIP 1/8W +-5% 8.2KR	RD3
4010891052	RES-CHIP 1/8W +-5% 91R	RA2,RB2,RC2,RD2,RE1
4050215255	RES-CF 1/2W +-5% 1.5KR -AT-	R413,433,453
4050233955	RES-CF 1/2W +-5% 3.3R -AT-	R461
4050410055	RES-CF 1/4W +-5% 10R -AT-	R419,439,459
4050410155	RES-CF 1/4W +-5% 100R -AT-	R408,428,448
4050410255	RES-CF 1/4W +-5% 1KR -AT-	R473,475,481
4050410355	RES-CF 1/4W +-5% 10KR -AT-	R474
4050410555	RES-CF 1/4W +-5% 1MR -AT-	R416,436,456
4050412155	RES-CF 1/4W +-5% 120R -AT-	R415,435,455
4050427155	RES-CF 1/4W +-5% 270R -AT-	R414,434,454
4050433955	RES-CF 1/4W +-5% 3.3R -AT-	R411,412,431,432,451,452
4050443055	RES-CF 1/4W +-5% 43R -AT-	R406,426,446
4050443155	RES-CF 1/4W +-5% 430R -AT-	R472
4050451055	RES-CF 1/4W +-5% 51R -AT-	R407,427,447
4050451355	RES-CF 1/4W +-5% 51KR -AT-	R402,422,442
4060210115	RES-CC 1/2W +-10% 100R -AT-	R418,438,458
4060210215	RES-CC 1/2W +-10% 1KR -AT-	R466
4060251315	RES-CC 1/2W +-10% 51KR -AT-	R467
4100239550	TRS. 2SC3955 TO-126	Q401,421,441
4110001208	TRS. 2SA1208 TO-92M (SC-51)-R	Q404,424,444
4110202910	TRS. 2SC2910 TO-92M(SC-51)-RT	Q403,423,443
411020945P	TRS. 2SC945P TO-92 -RT-	Q461
411020945P	TRS. KSC945CG TO-92 -RT-	Q461
411021515K	TRS. 2SC1515K TO-92 -RT-	Q405,425,445
4110219210	TRS. 2SC1921 TO-92M -RT-	Q405,425,445
4115023690	TRS. PN2369 TO-92 -RT-	Q402,422,442
4120141480	DIODE 1N4148 (SI) -AT-	D403-406,423-426,443-446
4120141487	DIODE 1N4148 (BAS32L) MLF SMD	DA1,DA2,DB1,DB2,DC1,DC2
4141091006	#P.C.B. VIDED (160X115)	
4141093501	@P.C.B. VIDED IC 65X48	
4159120500	IC LM1205N 28PIN	ICD1
4172015256	RES-MOF 2W +-5% 1.5KR -AT-	R409,410,429,430,449,450
4321129006	COIL PEAKING 1.2UH -AT-	L401,403,421,423,441,443
4322309006	COIL FERRITE 1 PASS -AT-	L402,422,442,461,462
4490700120	CONN. 7P WAFER 2.5MM JS011-07M	P1
4570304090	SOCKET CRT	FOR CRT
4705415001	SURGE PROTECTOR 200V 52M -AT-	NE401,421,441
5074104101	CAP-MP +-10% 0.1UF/100V -SF-	C475,478
5074224102	CAP-MP +-10% 0.22UF/250V -SF-	C407,427,447
5103102293	CAP-CC +-20% 1000PF/3KV -SF-	C480,481
5116103150	CAP-MC +-10% 0.01UF/50V -RT-	C492
5128271552	CAP-CC +-5% 270PF/50V -RT-	C479
5128560552	CAP-CC +-5% 56PF/50V -RT-	C446
5128820552	CAP-CCLK +-5% 82PF/50V -RT-	C406,426
5134104452	CAP-CC +80%-20% 0.1UF/50V SC45	C405,408,425,428,445,448,482
5156100T50	CAP-EC +-20% 10UF/50V -RT-	CA1,CB1,CC1,CD1,CD3
5156100T50	CAP-EC +-20% 10UF/50V -RT-	C491
5156221T25	CAP-EC +-20% 220UF/25V -RT-	C490
5156470S01	CAP-EC +-20% 47UF/100V -SF-	C477,494
5156470T16	CAP-EC +-20% 47UF/16V -RT-	CD9
5406100000-000	JUMP WIRE 0.6¢	J401-409,412,413,415-428
5406100000-000	JUMP WIRE 0.6¢	
5406100000-000	JUMP WIRE 0.6¢	
5560070016	CORE-FE (TR3.5X1.3X5) -AT-	
7096101250	NOISE FILTER	FT1-3
7146223456	CAP-CC +80%-20% 0.022UF/50V CH	CD8
7147104456	CAP-CC +80%-20% 0.1UF/50V CHIP	CD4,CD5,CD7,CE1,CE2
7147104456	CAP-CC +80%-20% 0.1UF/50V CHIP	CA2,CA3,CB2,CB3,CC2-4,CD2
8504113010	SCREW BIND(+) M3X10 MACH W/DIS	FOR Q401,421,441
C459178211	GND WIRE ASS'Y 145MM	NECK PCB TO REAR PANEL
C459431A41	GND WIRE ASS'Y	NECK SHIELD TO FBT COVER

DAUGHTER BOARD

SPARE PART	PART NO.	DESCRIPTION	ADDRESS
	2009097490	BKT PCB "B"	
	3340230165	BEAD PIN 16.5X2.3¢	P901
	4050410255	RES-CF 1/4W +-5% 1KR -AT-	R901,904,906,910,913,921,925,930,933,936,938
	4050410355	RES-CF 1/4W +-5% 10KR -AT-	R909,914,937,947
	4050410455	RES-CF 1/4W +-5% 100KR -AT-	R902,911,918,939,940,946
	4050415455	RES-CF 1/4W +-5% 150KR -AT-	R920 FOR IC903 (TOSHIBA)
	4050415455	RES-CF 1/4W +-5% 150KR -AT-	R920 FOR IC903 (HITACHI)
	4050420355	RES-CF 1/4W +-5% 20KR -AT-	R917,919,932
	4050422155	RES-CF 1/4W +-5% 220R -AT-	R934
	4050424355	RES-CF 1/4W +-5% 24KR -AT-	R908
	4050427255	RES-CF 1/4W +-5% 2.7KR -AT-	R903,915,916
	4050427355	RES-CF 1/4W +-5% 27KR -AT-	R905 FOR IC903 (HITACHI)
	4050433355	RES-CF 1/4W +-5% 33KR -AT-	R905 FOR IC903 (TOSHIBA)
	4050433455	RES-CF 1/4W +-5% 330KR -AT-	R920 FOR IC903 (ST)/(PHILIPS)
S	4050433555	RES-CF 1/4W +-5% 3.3MR -AT-	R931
	4050436455	RES-CF 1/4W +-5% 360KR -AT-	R920 FOR IC903 (HARRIS)
	4050447155	RES-CF 1/4W +-5% 470R -AT-	R923
	4050447255	RES-CF 1/4W +-5% 4.7KR -AT-	R922,927,935
	4050447355	RES-CF 1/4W +-5% 47KR -AT-	R905 FOR IC903 (ST)
	4050451355	RES-CF 1/4W +-5% 51KR -AT-	R928
	4050451455	RES-CF 1/4W +-5% 510KR -AT-	R929
	4050456255	RES-CF 1/4W +-5% 5.6KR -AT-	R912
	4050456455	RES-CF 1/4W +-5% 560KR -AT-	R926
	4050475255	RES-CF 1/4W +-5% 7.5KR -AT-	R907
	4050475355	RES-CF 1/4W +-5% 75KR -AT-	R905 FOR IC903 (HARRIS)/(PHILIPS)
	4050482355	RES-CF 1/4W +-5% 82KR -AT-	R924
S	411022120Y	TRS. 2SC2120Y TO-92 -RT-	Q901,903
S	4120104001	DIODE 1N4001 -AT-	D905,918,919,922
S	4120146060	DIODE 1N4606 (SI) -AT-	D901-904,910,914,915,917,920,921,923,924,926-930
S	4141095902	#P.C.B DAUGHTER (148.5x72)	
S	4155741230	IC 74HC123	IC903
	4159066501	POTO COUPLER TRIAL TLP665JF W=	PH901
S	4159339000	IC LM339 16PIN	IC902,904
S	4159393000	IC LM 393 14PIN	IC905
S	4159780500	IC 78M05 REGULATOR TO-220 3PIN	IC901
	4490300190	CONN. 3.96 3P W/O PIN 2 -SF-	SK902
	4490400130	CONN. 4P WAFER (BXB-XH-A) P221	SK903
	4490600130	CONN. 6P WAFER 2.5MM B-XH-A/P2	SK901
	5113224150	CAP-MC +-10% 0.22UF/50V -SF-	C914
	5116102150	CAP-MC +-10% 0.001UF/50V -RT-	C907,911
	5116103150	CAP-MC +-10% 0.01UF/50V -RT-	C903-905,908-910,912
	5128471552	CAP-CC +-5% 470PF/50V -RT-	C921,924
	5156109T50	CAP-EC +-20% 1UF/50V -RT-	C902
	5156221T35	CAP-EC +-20% 220UF/35V -RT-	C901
	5156229T50	CAP-EC +-20% 2.2UF/50V -RT-	C922
	5156470T10	CAP-EC +-20% 47U/10V -RT-	C919
	5156479T50	CAP-EC +-20% 4.7UF/50V -RT-	C915-918,920,923
	7051304660	LINEAR X'FORMER EI-35	T901
	8026113008	SCREW BIND(+) ZINC M3X8 TAPPING	FOR PCB BKT & PWR SAVING X1

SPARE PART	PART NO.	INDEX	DESCRIPTION	ADDRESS
S	1011097490	1	#LENS	
	1018097490	2	#KNOB PUSH	
	8507145025	3	SCREW BIND M5X25 W/LOCK WASHER	
S	1001097492	4	#BEZEL	
S	7010016114	5	CRT M34KNZ280X08	
	8135115025	6	SCREW CAP HI-LOW TAPPING M5X25	
	3111502016	7	FLAT WASHER M5 T=1.6	
	3100452015	8	RUBBER WASHER 4.5¢X20¢X1.5T	
	C001137491	9	CRT BRAID WIRE ASS'Y	FOR CRT GND
	7020147490	10	COIL DEGAUSSING W/AL-MYLAR TAP	
	1017097490	11	#BRACKET (L)	
	1016097490	12	#BRACKET (R)	
	1019097490	13	#KNOB ROTARY	
S	SS74920130-404	14	PCB DMC-1000	
S	4570704350	15	AC SOCKET	
	1004096490	16	#PUSH BAR	
S	C710731010	17	I/O CABLE ASS'Y	
S	PM74900442-V	18	PCB DAUGHTER (56X64X1.6T)	
S	PM74925044-V	19	DEF PCB	
	2004097490	20	NECK SHIELD	
	9005094386	21	SPONGE	
	1008097490	22	#FASTENER	
S	1015097490	23	#BASE	
S	1010094310	24	FOOT	
S	1014097490	25	#BUCKET	
	8026144016	26	SCREW B/HD M4X16 TAPPING "P"	
S	PM7492054H-V	27	PCB DAUGHTER (148.5X72)	
S	SS73101630-403	28	PCB DAUGHTER-S (48.7X27)	
S	SS73101230-404	29	PCB VIDEO IC (65X48)	
	4410512001	30	MEMBRANCE SWITCH 520117 REV:8	
	2007097490	31	ANCHOR PLATE	
	1012097490	32	PAD	
	1020097490	33	#CAP	
	1010097490	34	#HOOK	
S	PM74920244-V	35	VIDEO PCB	
	3111453410	36	WASHER FLAT	
	1023094330	37	SPACERS RING	FOR FBT H.V HAT
S	SS73101430-404	38	PCB DAUGHTER	
S	SS73101530-404	39	PCB DAUGHTER (13.1X21.1)	
	8026113008	40	SCREW BID(+) ZINC M3X8 TAPPING	FOR ANCHOR PLATE & PWR SAVING PCB X2
	2009097490	41	BKT PCB "B"	
	3060040060	42	RIVET NYLON	
	C001111060	43	CABLE BRAID WIRE ASS'Y	
	8026114008	44	SCREW B/H "B" TITE M4X8	
	8128112608	45	SCREW B/H W/CAP "B" M2.6X8 TIT	FOR PCB BKT & Q1 H/S
	3011400040	46	NUT M4	
	8626113012	47	SCREW BIND(+) ZN3C M3X12 SELF	
	2002091229	48	CLIP CABLE	
	8121144012	49	SCREW CAP B/HEAD "C" TITE M4X1	
	8121144008	50	SCREW CAP "C" M4X8	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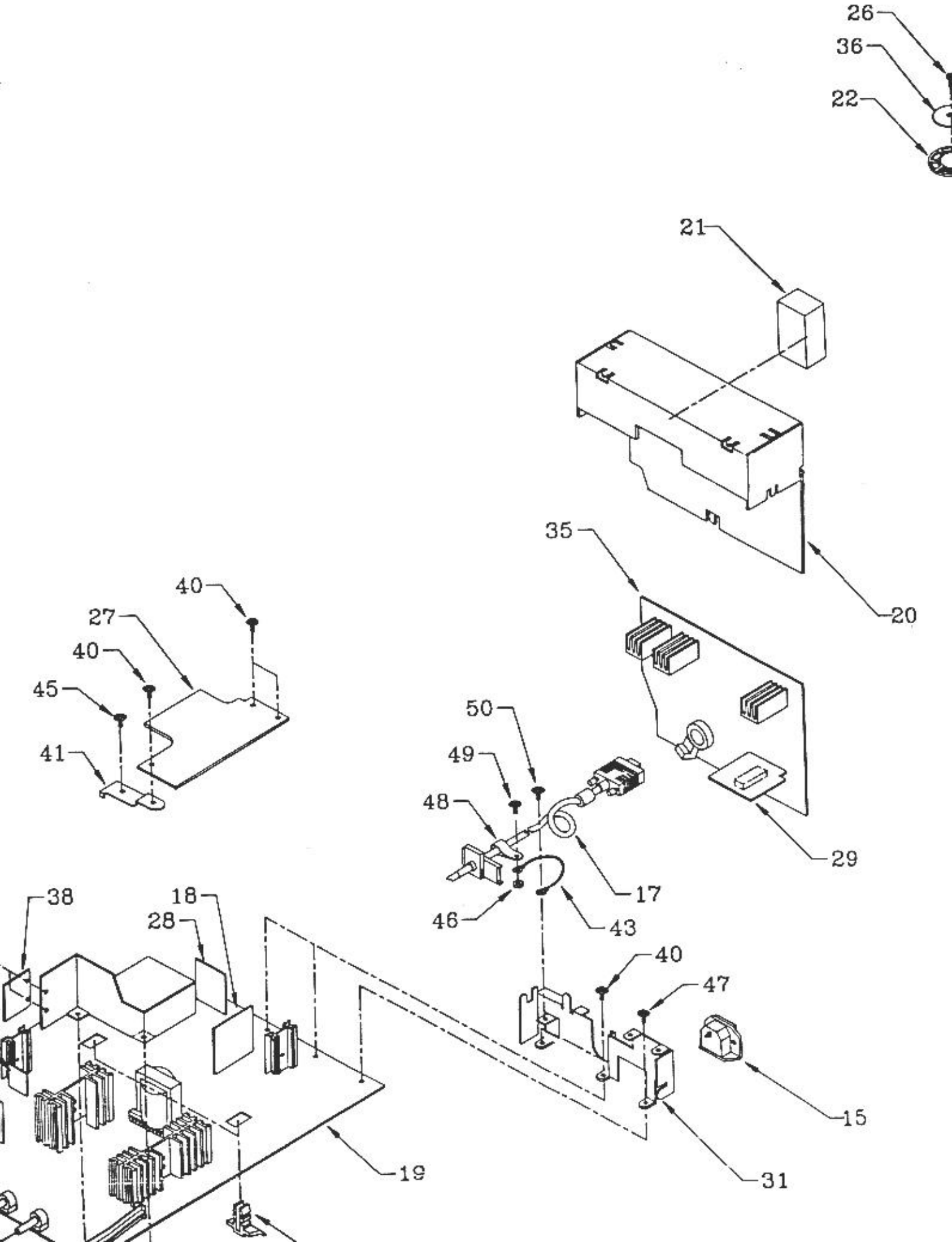
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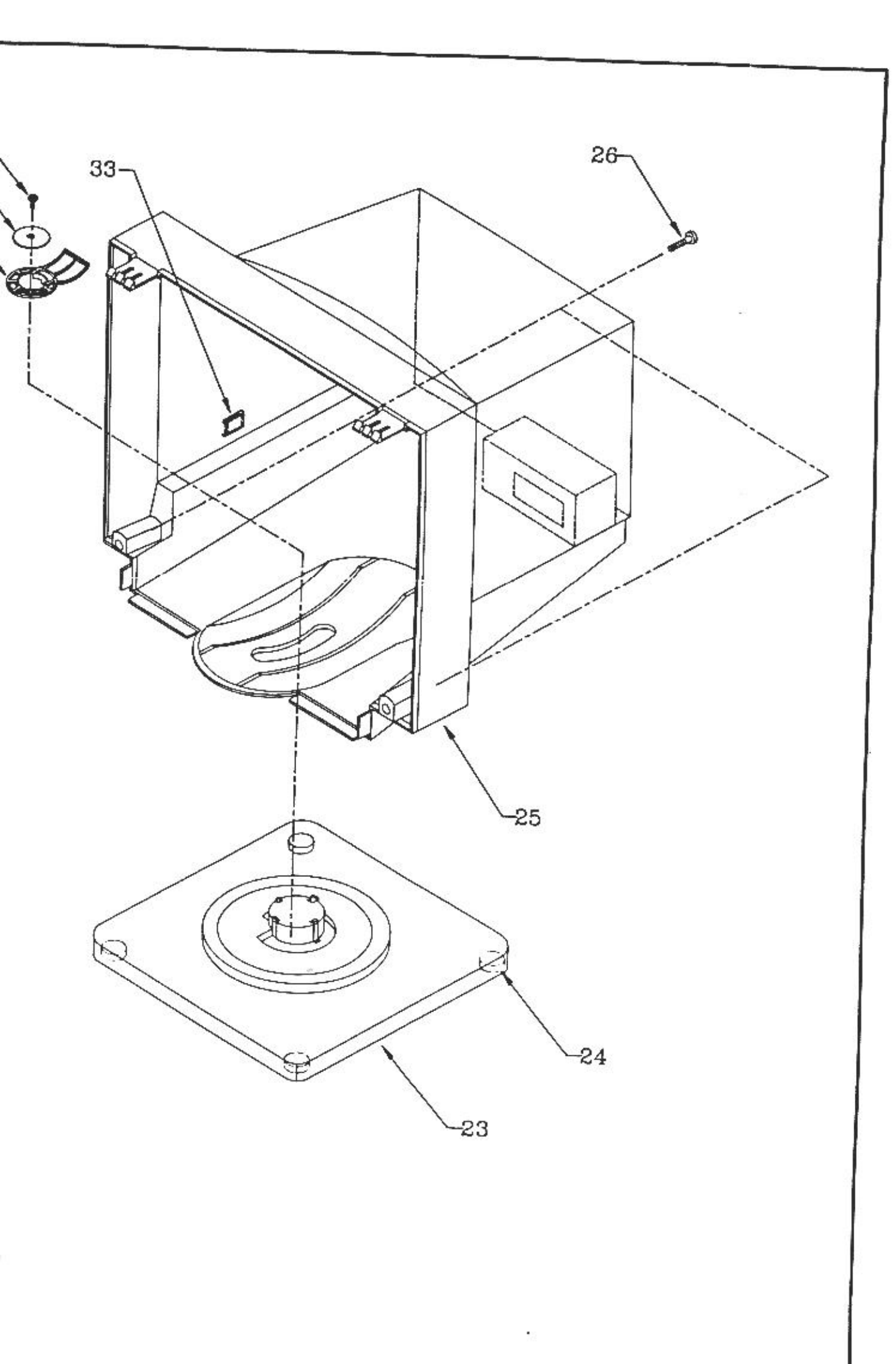
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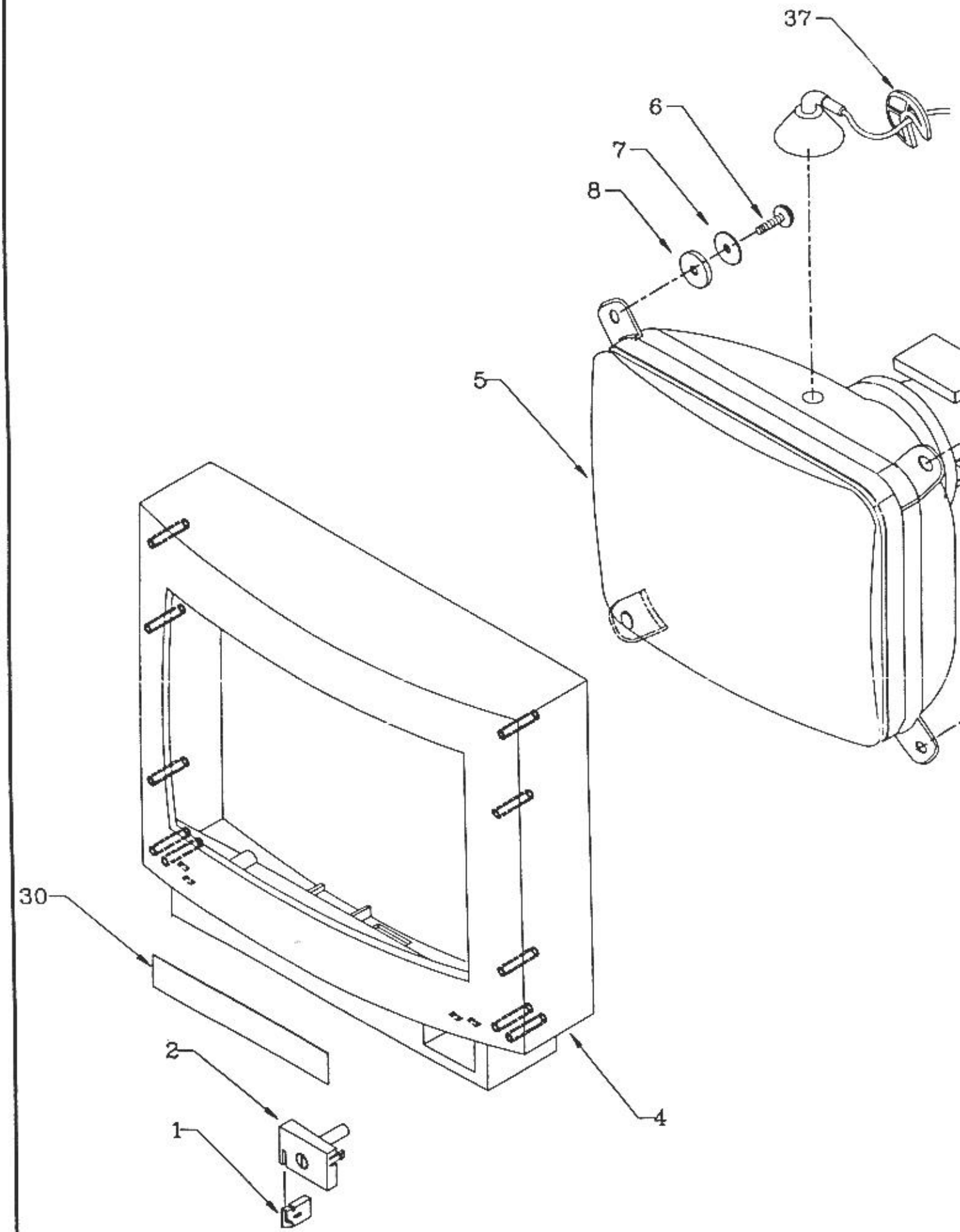
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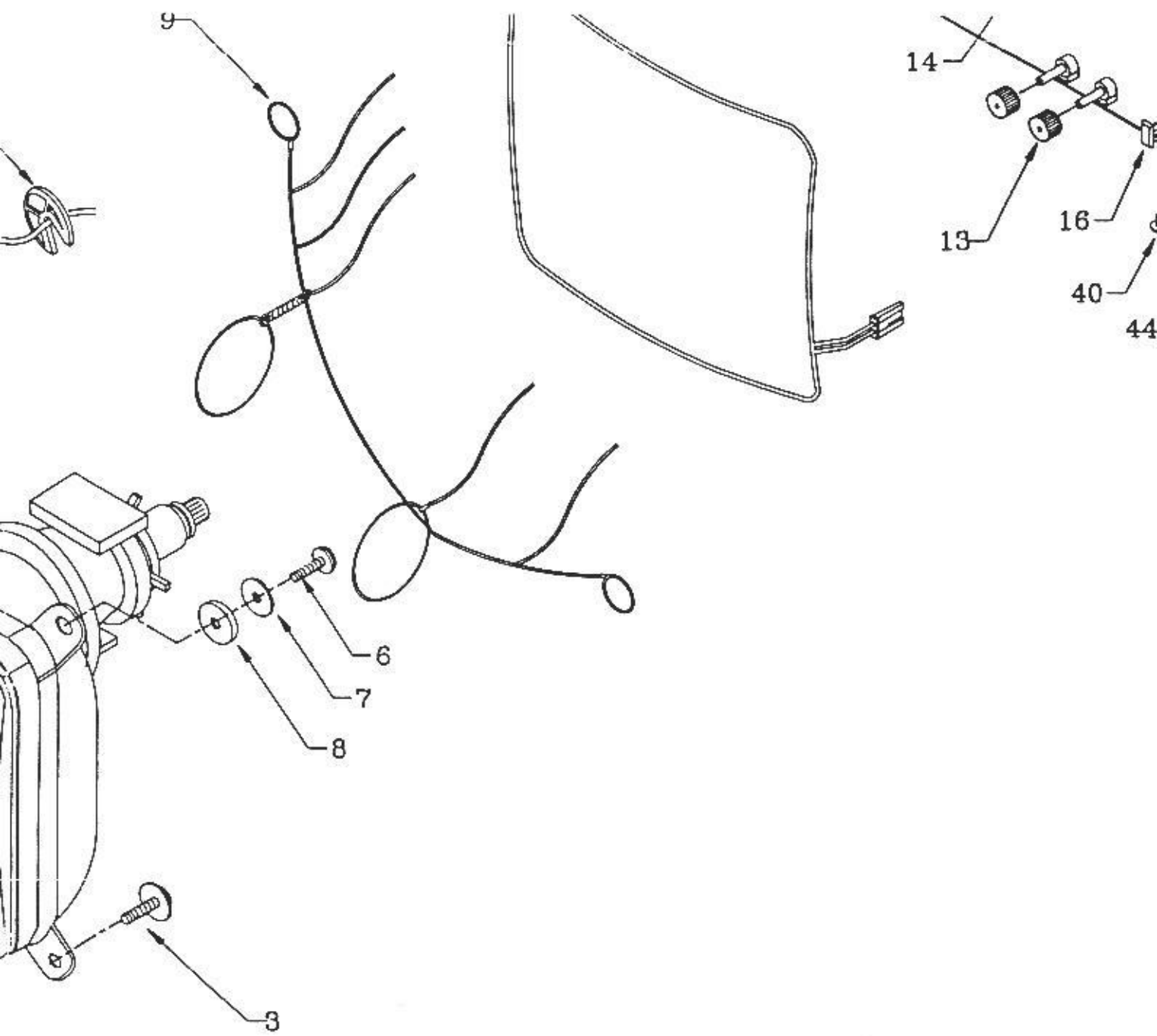
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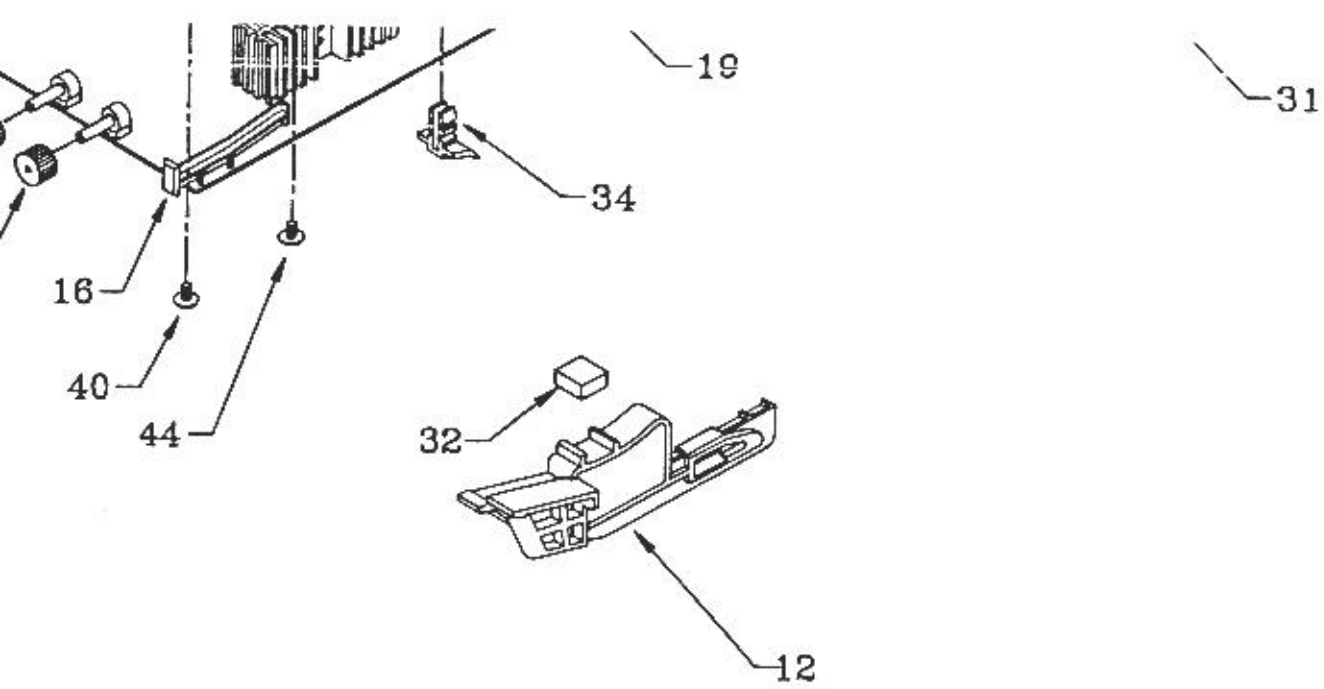
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MODEL NO.		1500D	
DRAWING NAME		EXPLODED VIEW	
DATE	DRAWN	CHECK	APPORV
1993 08/25			
ViewSonic Corporation			

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SAFETY NOTICE

THIS SERVICE MANUAL IS PREPARED TO ASSIST ENGINEERS OR TECHNICIANS OF REPAIR CENTERS WHO ARE IN CHARGE OF SERVICING THE MONITORS IN THE FIELD. THE SERVICE MANUAL, THEREFORE, IS NOT FOR USERS BUT FOR THOSE TECHNICALLY ORIENTED SERVICE ENGINEERS FROM REPAIR CENTERS WHO ARE CAPABLE OF SERVICING THE UNIT.

THIS SERVICE MANUAL EXPLAINS THE MONITOR'S OUTLINE, DETAILED FEATURES, FUNCTIONS AND BASIC CONSTRUCTION OF THE INDIVIDUAL UNIT OR CIRCUIT, ALIGNMENT PROCEDURE AND THE DETAILED TROUBLE-SHOOTING PROCEDURES.

THE CONTENTS SHOULD BE READ AND COMPLETELY UNDERSTOOD BEFORE ATTEMPTING SERVICE.

1) MAKE SURE THE POWER CORD IS DISCONNECTED BEFORE OPENING THE BACK-COVER OF THE MONITOR AND REPLACING ANY PARTS IN THE UNIT.

2) WHILE THE MONITOR IS IN OPERATION, DO NOT ATTEMPT TO CONNECT OR DISCONNECT ANY WIRE.

3) WHEN THE POWER IS ON, DO NOT ATTEMPT TO SHORT ANY PORTION OF THE CIRCUIT. THIS SHORTING MAY CAUSE DAMAGE TO THE TRANSISTORS, IC'S OR OTHER PARTS IN THE UNIT.

4) OPERATION OF THE MONITOR WITH THE CABINET OR THE BACK-COVER REMOVED INVOLVES A SHOCK HAZARD. THE REPAIR OR SERVICE WORK ON THESE MODELS SHOULD ONLY BE PERFORMED BY THOSE WHO ARE THOROUGHLY FAMILIAR WITH THE PRECAUTIONS NECESSARY WHEN WORKING ON HIGH VOLTAGE EQUIPMENT.

5) DO NOT INSTALL, REMOVE, OR HANDLE THE PICTURE TUBE IN ANY MANNER UNLESS SHATTERPROOF GOGGLES ARE WORN. PEOPLE NOT SO EQUIPPED SHOULD BE KEPT AWAY WHILE PICTURE TUBES ARE HANDLED. KEEP THE PICTURE TUBE AWAY FROM THE BODY WHILE HANDLING, & DONOT LIFT THE PICTURE TUBE BY THE NECK.

6) WHEN REPLACING A CHASSIS IN THE MONITOR, ALL THE PROTECTIVE DEVICES MUST BE PUT BACK IN PLACE, SUCH AS, BARRIERS, NON-METALLIC KNOBS, ADJUSTMENT AND COMPARTMENT SHIELDS, AND ISOLATION RESISTOR-CAPACITOR, ETC.

7) WHEN SERVICE IS REQUIRED, OBSERVE THE ORIGINAL LEAD DRESS. EXTRA PRECAUTION SHOULD BE TAKEN TO ENSURE CORRECT LEAD DRESS IN THE HIGH VOLTAGE CIRCUITRY AREA.

8) ALWAYS USE THE MANUFACTURER'S REPLACEMENT PARTS. ESPECIALLY CRITICAL PARTS AS INDICATED ON THE CIRCUIT DIAGRAM SHOULD NOT BE REPLACED BY OTHER MANUFACTURER'S. PARTS FURTHERMORE, WHERE A SHORT CIRCUIT HAS OCCURRED, ALSO REPLACE THOSE PARTS THAT INDICATE EVIDENCE OF OVERHEATING.

9) BEFORE RETURNING A SERVICED THE MONITOR TO THE CUSTOMER, THE SERVICE TECHNICIAN MUST THROUGHTLY TEST THE UNIT TO BE SURE THAT IT IS COMPLETELY SAFE TO OPERATE WITHOUT DANGER OF ELECTRICAL SHOCK, AND MUST ENSURE THAT NO PROTECTIVE DEVICE BUILT INTO THE MONITOR BY THE MANUFACTURER HAS BECOME DEFECTIVE, OR INADVERTENTLY DEFEATED DURING SERVICING.

PRECAUTIONS FOR SERVICING THE HIGH-VOLTAGE AREA :

THIS MONITOR IS PROVIDED WITH A HIGH VOLTAGE HOLD DOWN CIRCUIT FOR CLEARLY INDICATING THAT VOLTAGE HAS INCREASED IN EXCCESS OF A PREDETERMINED VALUE.
COMPLY WITH ALL NOTES DESCRIBED IN THIS SERVICE MANUAL REGARDING THIS HOLD DOWN CIRCUIT WHEN SERVICING, SO THAT IT MAY FUNCTION CORRECTLY.

1) EXERCISE CARE WHEN SERVICING THE CHASSIS WITH THE POWER LINE CONNECTED. B+ VOLTAGE AND HIGH VOLTAGE TERMINALS ARE EXPOSED WHICH, IF CARELESSLY CONTACTED, CAN CAUSE SERIOUS SHOCK OR RESULT IN DAMAGE TO THE CHASSIS. MAINTAIN INTERCONNECTING GROUND LEAD CONNECTIONS BETWEEN CHASSIS, ESCHUTHEON AND PICTURE TUBE DAG CLUSTER WHEN SERVICING THE CHASSIS.

2) THE B+ ADJ. CONTROLS IN THIS MONITOR ARE SEALED IN ORDER TO PROTECT THE USER FROM X-RAY RADIATION. THE B+ ADJ. CONTROLS DO NOT NORMALLY HAVE TO BE ADJUSTED. BUT IF THESE ARE REPLACED DUE TO DAMAGE, CHECK THE B+ VOLTAGE TO ENSURE THAT IT IS WITHIN SPECIFICATIONS AFTER ADJUSTMENT. THEN SEAL THESE CONTROLS ACCORDING TO THE MANUFACTURER'S INSTRUCTION.

3) FAILURES IN THE HIGH VOLTAGE AREA CAN INCREASE X-RAY RADIATION. THE MONITORS SHOULD NOT BE OPERATED WITH HIGH VOLTAGE LEVELS EXCEEDING THE SPECIFIED RATING FOR THE CHASSIS TYPE. THE MAXIMUM HIGH VOLTAGE SPECIFIED FOR OPERATING THE MONITOR CHASSIS IS 25KV +- 1.5KV AT ZERO BEAM CURRENT AT THE SPECIFIED LING VOLTAGE. HIGHER VOLTAGE THAN SPECIFIED ALSO INCREASES THE POSSIBILITY OF FAILURE IN THE HIGH VOLTAGE AREA.

4) IT IS IMPORTANT TO MAINTAIN THE SPECIFIED VALUES OF ALL PARTS IN THE HORIZONTAL SCANNING AND HIGH VOLTAGE CIRCUITS OR ANYWHERE ELSE IN THE MONITOR THAT COULD CAUSE A RISE IN HIGH VOLTAGE OR OPERATING SUPPLY VOLTAGE. NO CHANGES SHOULD BE MADE TO THE ORIGINAL DESIGN OF THE MONITOR.

5) THE USE OF UNAUTHORIZED SUBSTITUTE PARTS MAY CREATE A SHOCK, FIRE, X-RAY RADIATION OR OTHER HAZARD. ANY PARTS REPLACEMENT IN THIS MONITOR MUST BE DONE IN ACCORDANCE WITH THE BOM.

6) TO CHECK AND SEE THE PRESENCE OF HIGH VOLTAGE, USE AN ACCURATE HIGH IMPEDANCE HIGH VOLTAGE METER CONNECTED BETWEEN THE SECOND ANODE LEAD AND THE CRT DAG GROUNDING DEVICE. WHEN SERVICING THE HIGH VOLTAGE SYSTEM, REMOVE STATIC CHARGE FROM IT BY CONNECTING A 10K-OHM RESISTOR IN SERIES WITH AN INSULATED WIRE (SUCH AS A TEST PROBE) BETWEEN THE PICTURE TUBE DAG AND THE SECOND ANODE LEAD. (THE AC LINE CORD SHOULD BE DISCONNECTED FROM THE AC SUPPLY.)

SERVICE WARNING

AT MINIMUM BRIGHTNESS AND CONTRAST THE OPERATING HIGH VOLTAGE IN THIS DISPLAY IS LOWER THAN 30KV. IF ANY COMPONENT HAVING INFLUENCE ON THE HIGH VOLTAGE IS REPLACED, CONFIRM THAT THE HIGH VOLTAGE AT MINIMUM BRIGHTNESS AND CONTRAST IS LOWER THAN 30KV.

X-RADIATION WARNING

TUBE : THE PRIMARY SOURCE OF X-RADIATION IN THIS MONITOR IS THE PICTURE TUBE. THE TUBE UTILIZED IN THIS CHASSIS IS SPECIALLY CONSTRUCTED TO LIMIT X-RADIATION EMISSIONS. FOR CONTINUED X-RADIATION PROTECTION, THE REPLACEMENT TUBE MUST BE THE SAME TYPE AS THE ORIGINAL, MANUFACTURER APPROVED TYPE.
WHEN TROUBLESHOOTING AND MAKING TEST MEASUREMENTS IN A MONITOR WITH A PROBLEM OF EXCESSIVE HIGH VOLTAGE, AVOID BEING UNNECESSARILY CLOSE TO THE PICTURE TUBE AND THE HIGH VOLTAGE PARTS. DO NOT OPERATE THE CHASSIS LONGER THAN IS NECESSARY TO LOCATE THE CAUSE OF EXCESSIVE VOLTAGE.

THE SURFACE OF THE PICTURE TUBE MAY GENERATE X-RADIATION. TAKE PRECAUTIONS DURING SERVICING, AND IF POSSIBLE THE USE OF A LEAD APRON OR METAL FOR SHIELDING IS RECOMMENDED. TO AVOID POSSIBLE EXPOSURE TO X-RADIATION AND ELECTRICAL SHOCK HAZARD, THE HIGH VOLTAGE COMPARTMENT AND THE PICTURE TUBE SHIELD MUST BE KEPT IN PLACE WHENEVER THE CHASSIS IS IN OPERATION. WHEN REPLACING PICTURE TUBE USE ONLY THE DESIGNATED REPLACEMENT PART SINCE IT IS A CRITICAL PART WITH REGARD TO X-RADIATION AS NOTED ABOVE.

CAUTION

THE LINE CORD AND PLUG PROVIDED WITH THIS SET IS DESIGNED FOR SAFETY. IT IS TO BE USED WITH A PROPERLY GROUNDED POWER RECEPTACLE TO AVOID POSSIBLE ELECTRICAL SHOCK. DO NOT REMOVE THE REAR COVER OF THE SET AS THIS CAN EXPOSE YOU TO VERY HIGH VOLTAGES AND OTHER HAZARDS.

FCC RADIO FREQUENCY INTERFERENCE STATEMENT

WARNING

THIS EQUIPMENT GENERATES, USES AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. IT HAS BEEN TESTED AS A CLASS A COMPUTING DEVICE AND FOUND TO COMPLY WITH THE LIMITS SPECIFIED IN SUBPART J OF PART 15 OF FCC RULES, WHICH ARE BESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE WHEN OPERATED IN A COMMERCIAL ENVIRONMENT.

* SIGNAL CABLE
SHIELDED COAXIAL CABLE

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO TAKE WHATEVER-MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Specifications

1. CATEGORY — COLOR LANDSCAPE

2. CRT

SIZE:	14"	
PHOSPHOR:	P22	MEDIUM SHORT
DEFLECTION ANGLE:	90°	
DOT PITCH	0.28	mm
X'MISSION RATE:	57%	

3. f-SYNC. — MULTI-SYNC
f-H: 30 -- 65 KHZ f-V: 50 -- 110 HZ

4. VIDEO — VIDEO TYPE: ANALOG

5. RESOLUTION

MODE NO	Hf KHz	Vf Hz	DOT x LINE
01	61.08	75.78	1024 x 768
02	59.59	72.09	1024 x 768
03	56.48	70.07	1024 x 768
04	48.083	72.19	800 x 600
05	37.86	72.8	640 x 480
06	35.16	56.25	800 x 600
07	31.47	59.94	640 x 480

6. POWER SUPPLY — OFF-LINE FULL RANGE
POWER CONSUMPTION : < 120 W
POWER SAVING FUNCTION

7. EXTERNAL CONTROL — POWER SWITCH
ADVANCED DIGITAL CONTROLS

8. MAGNETIC FIELD — H=0.01 V=0.45 GAUSS (NORTHERN HEMISPHERE)
H=0.01 V=-0.52 GAUSS (SOUTHERN HEMISPHERE)

TIMING CHART

FACTORY MODE SETTINGS						
PARAMETER	MODE					
	1	2	3	4	5	6
HORIZONTIAL TIMING						
fH SYNC KHZ	61.08	59.59	56.48	48.083	37.86	35.16
A H-TOTAL μS	16.37	16.78	17.707	20.8	26.413	28.44
B H-SYNC μS	3.72	1.62	1.813	2.40	1.27	2.00
C H-BP μS	0.65	1.954	1.920	1.28	4.06	3.56
D H-ACTIVE μS	11.91	12.91	13.653	16.00	20.317	22.22
E H-FP μS	0.09	0.236	0.320	1.12	0.762	0.66
VERTICAL TIMING						
fV SYNC HZ	75.78	72.09	70.07	72.19	72.8	56.25
O V-TOTAL mS	13.191	13.87	14.271	13.853	13.735	17.775
P V-SYNC mS	0.131	0.101	0.1066	0.125	0.079	0.057
Q V-BP mS	0.491	0.807	0.513	0.478	0.740	0.626
R V-ACTIVE mS	12.57	12.977	13.598	12.48	12.678	17.064
S V-FP mS	0.0089	0.016	0.053	0.77	0.238	0.028
H/V SYNC POLARITY	+ / +	- / -	- / -	+ / +	- / -	+ / +
DISPLAY SIZE HOR. unit : mm VER.	260 195	260 195	260 195	260 195	260 195	260 195
RESOLUTION DOT LINE	1024 768	1024 768	1024 768	800 600	640 480	800 600
fPIXEL MHZ	86.00	79.32	75.00	50.00	31.5	36.00
TEST MODE						